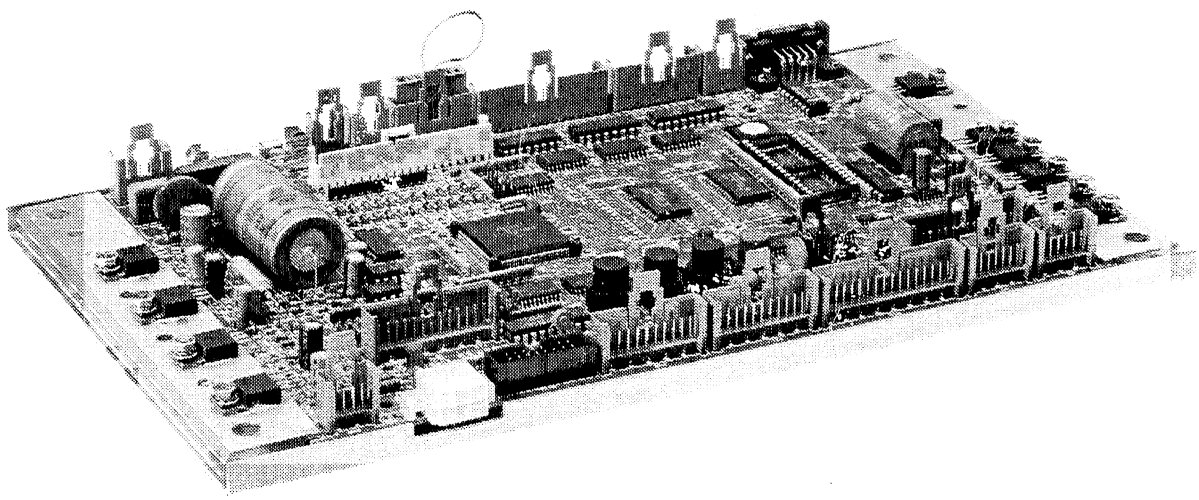
2 GB

WURLITZER

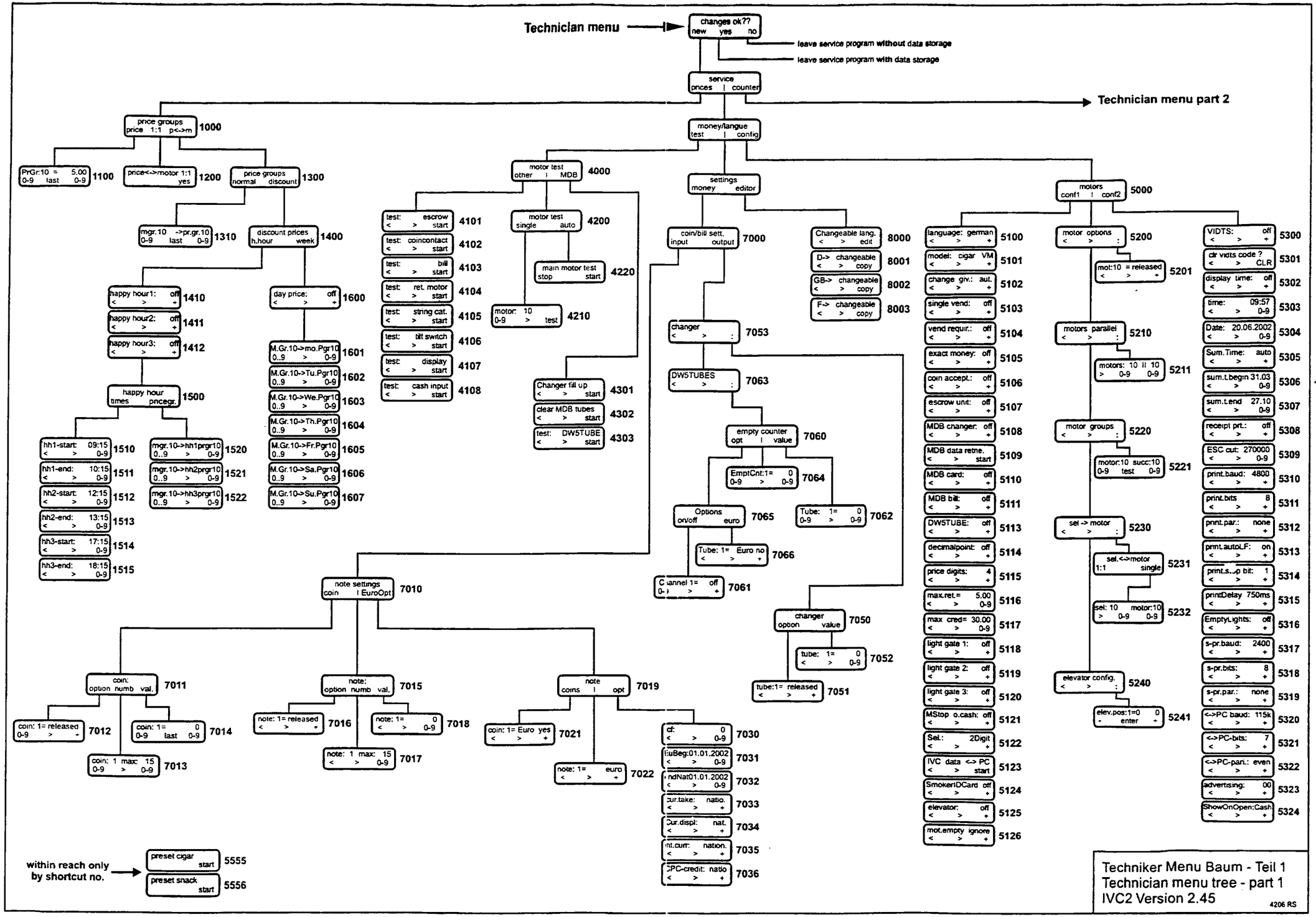
CE

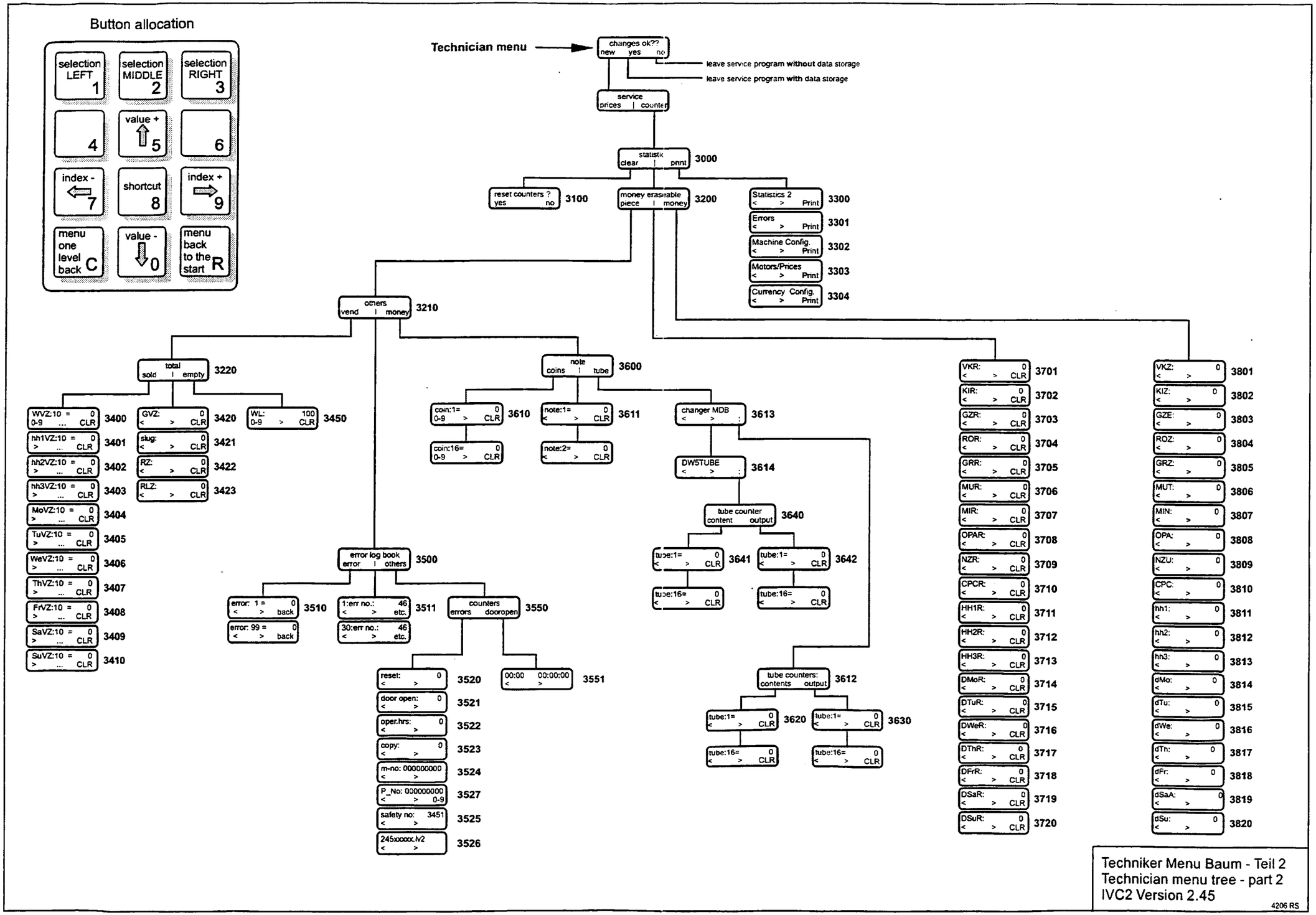
IVC2 Control Unit Version 2.4x



IVC2 control unit description

Shortcut number (SCN) on page . . .


Technician menu
changes ok?? new yes no
leave service program without data storage
leave service program with data storage
service prices | counter
Technician menu part 2
price groups price 1:1 p<->m 1000
PrGr:10 = 5.00 0-9 last 0-9 1100
price<->motor 1:1 yes 1200
price groups normal discount 1300
mgr.10 ->pr.gr.10 0-9 last 0-9 1310
discount prices h.hour week 1400
happy hour1: off 1410
happy hour2: off 1411
happy hour3: off 1412
happy hour times pricegr. 1500
hh1-start: 09:15 1510
hh1-end: 10:15 1511
hh2-start: 12:15 1512
hh2-end: 13:15 1513
hh3-start: 17:15 1514
hh3-end: 18:15 1515
mgr.10->hh1prgr10 1520
mgr.10->hh2prgr10 1521
mgr.10->hh3prgr10 1522
day price: off 1600
M.Gr.10->mo.Pgr10 1601
M.Gr.10->Tu.Pgr10 1602
M.Gr.10->We.Pgr10 1603
M.Gr.10->Th.Pgr10 1604
M.Gr.10->Fr.Pgr10 1605
M.Gr.10->Sa.Pgr10 1606
M.Gr.10->Su.Pgr10 1607
money/langue test | config
motor test other | MDB 4000
test: escrow 4101
test: coincontact 4102
test: bill 4103
test: ret. motor 4104
test: string cat. 4105
test: tilt switch 4106
test: display 4107
test: cash input 4108
motor test single auto 4200
main motor test stop start 4220
motor: 10 4210
Changer fill up 4301
clear MDB tubes 4302
test: DW5TUBE 4303
settings money editor
coin/bill sett. input output 7000
changer 7053
DW5TUBES 7063
empty counter opt | value 7060
EmptCnt:1= 0 7064
Options on/off euro 7065
Tube: 1= 0 7062
Tube: 1= Euro no 7066
Channel 1= off 7061
Changeable lang. 8000
D-> changeable copy 8001
GB-> changeable copy 8002
F-> changeable copy 8003
note settings coin | EuroOpt 7010
coin: option numb val. 7011
coin: 1= released 7012
coin: 1= 0 7014
coin: 1 max: 15 7013
note: option numb val. 7015
note: 1= released 7016
note: 1= 0 7018
note: 1 max: 15 7017
note coins | opt 7019
coin: 1= Euro yes 7021
note: 1= euro 7022
changer option value 7050
tube: 1= 0 7052
tube:1= released 7051
cf: 0 7030
EuBeg:01.01.2002 7031
EndNat01.01.2002 7032
Cur.take: natio. 7033
Cur.displ: nat. 7034
Cnt.curr: nation. 7035
PC-credit: natio 7036
motors conf1 | conf2 5000
language: german 5100
model: cigar VM 5101
change grv.: aut. 5102
single vend: off 5103
vend requir.: off 5104
exact money: off 5105
coin accept.: off 5106
escrow unit: off 5107
MDB changer: off 5108
MDB data retne. start 5109
MDB card: off 5110
MDB bill: off 5111
DW5TUBE: off 5113
decimalpoint: off 5114
price digits: 4 5115
max.ret.= 5.00 5116
max cred= 30.00 5117
light gate 1: off 5118
light gate 2: off 5119
light gate 3: off 5120
MStop o.cash: off 5121
Sel.: 2Digit 5122
IVC data <> PC start 5123
SmokerIDCard off 5124
elevator: off 5125
mot.empty ignore 5126
motor options 5200
mot:10 = released 5201
motors parallel 5210
motors: 10 II 10 5211
motor groups 5220
motor:10 succ:10 test 5221
sel -> motor 5230
sel.<->motor 1:1 single 5231
sel: 10 motor:10 5232
elevator config. 5240
elev.pos:1=0 0 enter 5241
VIDTS: off 5300
clr vidts code ? CLR 5301
display time: off 5302
time: 09:57 5303
Date: 20.06.2002 5304
Sum.Time: auto 5305
sum.t.begin 31.03 5306
sum.t.end 27.10 5307
receipt prt.: off 5308
ESC cut: 270000 5309
print.baud: 4800 5310
print.bits 8 5311
print.par.: none 5312
print.autoLF: on 5313
print.s..p bit: 1 5314
printDelay 750ms 5315
EmptyLights: off 5316
s-pr.baud: 2400 5317
s-pr.bits: 8 5318
s-pr.par.: none 5319
<->PC baud: 115k 5320
<->PC-bits: 7 5321
<->PC-par.: even 5322
advertising: 00 5323
ShowOnOpen:Cash 5324
within reach only by shortcut no.
preset cigar start 5555
preset snack start 5556
Techniker Menu Baum - Teil 1
Technician menu tree - part 1
IVC2 Version 2.45
4206 RS


Button allocation
selection LEFT 1
selection MIDDLE 2
selection RIGHT 3
4
value + 5
6
index - 7
shortcut 8
index + 9
menu one level back C
value - 0
menu back to the start R
Technician menu
changes ok?? new yes no
leave service program without data storage
leave service program with data storage
service prices | counter
statistic clear | print 3000
reset counters ? yes no 3100
money erasable piece | money 3200
Statistics 2 < > Print 3300
Errors < > Print 3301
Machine Config. < > Print 3302
Motors/Prices < > Print 3303
Currency Config. < > Print 3304
others vend | money 3210
total sold | empty 3220
note coins | tube 3600
WVZ:10 = 0 0-9 ... CLR 3400
hh1VZ:10 = 0 > ... CLR 3401
hh2VZ:10 = 0 > ... CLR 3402
hh3VZ:10 = 0 > ... CLR 3403
MoVZ:10 = 0 > ... CLR 3404
TuVZ:10 = 0 > ... CLR 3405
WeVZ:10 = 0 > ... CLR 3406
ThVZ:10 = 0 > ... CLR 3407
FrVZ:10 = 0 > ... CLR 3408
SaVZ:10 = 0 > ... CLR 3409
SuVZ:10 = 0 > ... CLR 3410
GVZ: 0 < > CLR 3420
slug: 0 < > CLR 3421
RZ: 0 < > CLR 3422
RLZ: 0 < > CLR 3423
WL: 100 0-9 > CLR 3450
coin:1= 0 0-9 > CLR 3610
coin:16= 0 0-9 > CLR
note:1= 0 < > CLR 3611
note:2= 0 < > CLR
changer MDB < > : 3613
DW5TUBE < > : 3614
tube counter content output 3640
tube:1= 0 < > CLR 3641
tube:16= 0 < > CLR
tube:1= 0 < > CLR 3642
tube:16= 0 < > CLR
tube counters: contents output 3612
tube:1= 0 < > CLR 3620
tube:16= 0 < > CLR
tube:1= 0 < > CLR 3630
tube:16= 0 < > CLR
error log book error | others 3500
error: 1 = 0 < > back 3510
error: 99 = 0 < > back
1:err no.: 46 < > etc. 3511
30:err no.: 46 < > etc.
counters errors dooropen 3550
reset: 0 < > 3520
door open: 0 < > 3521
oper.hrs: 0 < > 3522
copy: 0 < > 3523
m-no: 000000000 < > 3524
P_No: 000000000 < > 0-9 3527
safety no: 3451 < > 3525
245xxxxx.lv2 < > 3526
00:00 00:00:00 < > 3551
VKR: 0 < > CLR 3701
KIR: 0 < > CLR 3702
GZR: 0 < > CLR 3703
ROR: 0 < > CLR 3704
GRR: 0 < > CLR 3705
MUR: 0 < > CLR 3706
MIR: 0 < > CLR 3707
OPAR: 0 < > CLR 3708
NZR: 0 < > CLR 3709
CPCR: 0 < > CLR 3710
HH1R: 0 < > CLR 3711
HH2R: 0 < > CLR 3712
HH3R: 0 < > CLR 3713
DMoR: 0 < > CLR 3714
DTuR: 0 < > CLR 3715
DWeR: 0 < > CLR 3716
DThR: 0 < > CLR 3717
DFrR: 0 < > CLR 3718
DSaR: 0 < > CLR 3719
DSuR: 0 < > CLR 3720
VKZ: 0 < > 3801
KIZ: 0 < > 3802
GZE: 0 < > 3803
ROZ: 0 < > 3804
GRZ: 0 < > 3805
MUT: 0 < > 3806
MIN: 0 < > 3807
OPA: 0 < > 3808
NZU: 0 < > 3809
CPC: 0 < > 3810
hh1: 0 < > 3811
hh2: 0 < > 3812
hh3: 0 < > 3813
dMo: 0 < > 3814
dTu: 0 < > 3815
dWe: 0 < > 3816
dTh: 0 < > 3817
dFr: 0 < > 3818
dSaA: 0 < > 3819
dSu: 0 < > 3820
Techniker Menu Baum - Teil 2
Technician menu tree - part 2
IVC2 Version 2.45
4206 RS

1 About this IVC2 control unit description . . .

1.1 Guide - overview of the chapters' contents

You are not sure where to find the information you are looking for? The table below will help you with this problem..

Chapter no.	Chapter	Description
1	About this IVC2 control unit description...	This chapter provides basic information how to use this IVC2 control unit description and explanations about the typographic conventions and symbols used.
2	Safety instructions	This chapter provides important information about safe handling. Read this chapter carefully and pay attention to all safety instructions, see page 4.
3	Programming – how to call up the menus	This chapter provides essential information how to work with the basic and the technical menu, see page 5.
4	Working with the basic menu	This chapter provides information about working with the basic menu where you can programme the essential functions of the machine, see page 11.
5	Working with the technical menu	This chapter provides information about working with the technical menu where all functions of the IVC2 control unit are available, see page 17.
6	Flexible selection-motor-price group assignment	Here you can find examples about programming, see page 65.
7	Reprogramming of the IVC2 control unit	Here you can find information about new programming, e.g. after exchange of the IVC2 control unit, see page 71.
8	Error messages and remedy	Here you can find information about the error messages and how to proceed, see page 77.
9	Appendix	Here you can find further information about the IVC2 control unit, see page 80.
10	Index	The keywords in the index will help you to find required information quickly, see page 83.

1.2 Typographic conventions and symbols in the text

Different facts in this manual are marked by using special typographic characters and symbols. The following examples will help you to identify the most important typographic conventions.

ATTENTION!
This symbol informs you about damage at the device caused by improper use. Instructions are given to avoid danger.

WARNING!
This symbol informs you about a possible danger to life and/or limb. Instructions are given to avoid danger.

NOTE:
This symbol marks text which give you tips and hints in order to simplify the handling of the IVC2 control unit.

[Display] Terms in square brackets mark messages in the display.

2 Safety instructions

2.1 General safety instructions

The vending machine is constructed according to the latest technological developments and guarantees safe use. Nevertheless, dangerous situations might occur for persons, material, incorrect handling or improper usage or if you do not pay attention to the safety instructions.

WARNING! Danger of injury to hands!
During all work to be done inside the vending machine, for example during conversion of product compartments, care should be taken to avoid injury to hands.

WARNING! Danger to life from electric shock!
Unplug the power cord before you work on an electric component. Pay attention to the corresponding safety instructions if work has to be done at the device during power connected. All the voltage carrying components cannot be accessed directly. It is necessary to remove covers or *casings* which must to be replaced after your work.

2.2 Safety instructions - electricity

All the circuits within the device work with low voltage (24 or 26volts). This low voltage is supplied by a transformer which converts the mains current.

To protect the vending machine against overload, it is equipped with a thermal fuse. In case of overload this switches the machine off.

To protect the vending machine against overload, a slow-blow fuse 3.15amps is integrated into the low voltage circuits on the IVC2 control unit, see page 80.

3 Programming – accessing the menus

3.1 Basic menu or technical menu?

All programming of the IVC2 control unit can be performed by means of user-freindly menus. According to the requirements you can either use the basic or the technical menu.

3.1.1 Explanations concerning the basic menu

The basic menu enables you to perform the most common programmings and evaluations in a simple and rapid way. It offers the following functions:

- Price settings
  - Changing single prices, see page 11.
- Statistical data
  - Display cash box contents, see page 13.
  - Display turnover, see page 13.
  - Display change paid out, see page 13.
  - Display sum of money in the change tubes, see page 13.
  - Display revenues by means of the card system, see page 14.
  - Display number of sold products, see page 14.
  - Reset of statistic counters, see page 14.
- Printout
  - Print out of vend statistics, see page 15.
- Clear statistic counters, see page 16

3.1.2 Explanations concerning the technical menu

The technical menu enables you to perform all functions of the IVC2 control unit. You can reach single points of the menu in a direct way by means of shortcut numbers. Points of the menu belonging together are joined in loops:

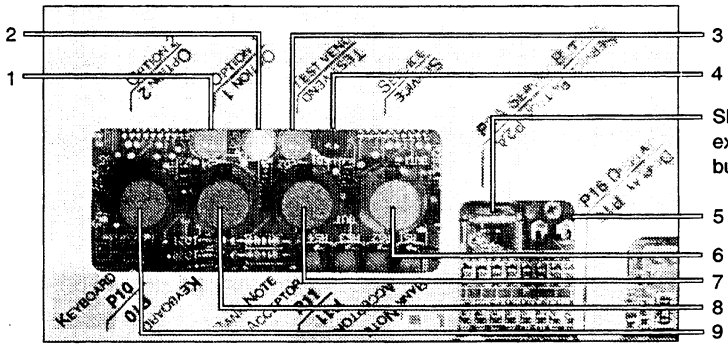
The chapter 'Working with the technical menu' provides information on how to call up single points of the menu and possible settings:

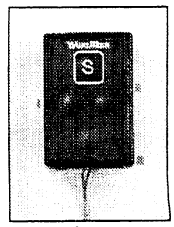
- Summary and explanations to the single points of the menu, see page 17.
- Flexible selection-motor-price groups assignement, see page 65.
- Reprogramming of an IVC2 control unit, see page 71.

3.2 Button allocation of the IVC2 control unit

Accessing control functions and navigation in the corresponding menus is done by means of the function keys on the IVC2 control unit and the selection buttons. The function of the red button 'SERVICE' on the IVC2 control unit can be effected by pressing button 'S' of the external service button.

3.2.1 Function keys of the IVC2 control unit and the external service button





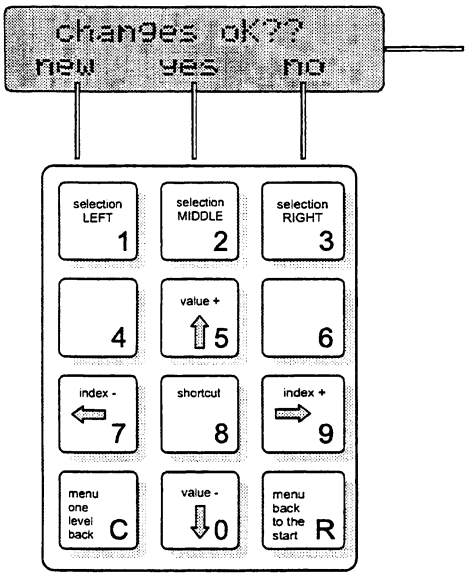
external service button

No.	Description	Function
1	operating voltage LED – green	• Lights while operating voltage is supplied.
2	error LED – yellow	• Flashes if at least one motor does not work properly due to mechanical problem, e.g. a cable broken, products got stuck, an individual drive is defective etc. • Lights as long as another key is being pressed.
3	credit LED – green	• Lights as long as credit is available, also in case of test credit.
4	error LED – red	• Flashes in case of warnings (error number 1 - 9), see page 77. • Lights in case of an error (error number > 9), see page 77.
5	dimmer for display	By means of the dimmer (10kOhms) you can adjust brightness of the display. Check position of the dimmer if nothing is displayed.
6	button SERVICE (red) or external service button	If this key (or key S of the service button) is pressed after the door has been opened, the IVC2 control unit switches to the basic menu.
7	key test vend	After having pressed this key test vends can be made (with open door, without money insertion).
8	key option 1	After having pressed this key the vending machine is out of operation until the door is opened the next time (usefull during maintenance or filling).
9	key option 2 **motor test**	When pressing this key the display shows: Motor Test Start • When you close the door and press selection button 3 a mechanical motor test starts (one product off each compartment) • You can interrupt the motor test at any time by pressing selection button 3. • When the motor test is completed, the IVC2 control unit switches back to the state 'In operation'.
	door switch	The door switch sends a signal to the IVC2 control unit indicating whether the door is open or closed. If the door is open, the vending machine can be programmed and all functions can be performed. These operations are not stored in the statistical data.

3.2.2 Button allocation of the selection buttons (in the technical menu)

In general all selection buttons have the same functions in all menus. Allocation is shown in the following table.

For some menus the selection buttons have different functions (due to functional reasons), in this case the special functions are described indetail later in this manual.



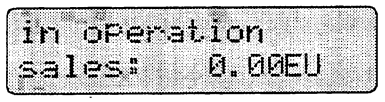
Example:
Display when you called up the technical menu.

Button	Function
1	Performs the function shown in the bottom line RH side.
2	Performs the function shown in the middle of the bottom line.
3	Performs the function shown in the bottom line LH side.
4	Generally not assigned - if a function is allocated, the function is described in detail later in this manual.
5	Increases the value displayed - e.g.: PrGr (price group) = **5.00 to 5.01.**
6	Generally not assigned - if a function is allocated, the function is described in detail later in this manual.
7	Decreases the index by one value - e.g.: PrGr (price group) or mgr (motor group).
8	Shows the shortcut number of the current menu.
9	Increases the index by one value - e.g.: PrGr (price group) or mgr (motor group).
C	Jumps back one level in the menu tree. Is used to set the decimal point when entering decimal numbers.
0	For accessing the technical menu. To call up the GOTO display in the technical start menu **or (dependent on the menu)** reduces the value displayed - e.g. PrGr (price group) = **5.00 to 4.99.**
R	To leave the menu, for intermediate or final storage or rebuilt latest state of programming of the IVC2 control unit.

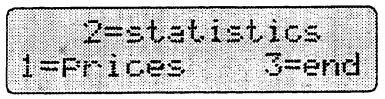
3.3 Call up the basic menu

To call up the basic menu proceed as follows:

1. Open the machine door.
   ⇨ Display shows:



2. Press the red button 'SERVICE' on the IVC2 control unit or button 'S' of the external service button.
   ⇨ Display shows:

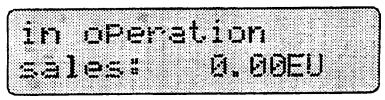


☑ You reached the basic menu.
Further information about the basic menu, see page 11.

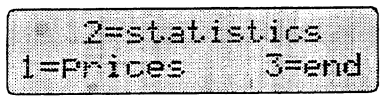
When you opened the door the bottom line of the display shows the present turnover 'cash'. You can change this text to 'sells' (number of vends), see page 40.

3.4 Call up the technical menu

1. Open the machine door.
   ⇨ Display shows:

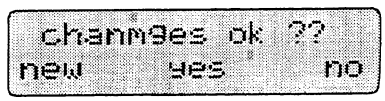


2. Press the red button 'SERVICE' on the IVC2 control unit or button 'S' of the external service button.
   ⇨ Display shows:
   ⇨ You reached the basic menu.

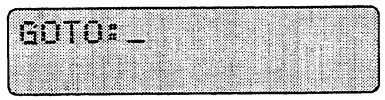


3. Press selection button [0].

4. Press again, **within 5 seconds**, the red button 'SERVICE' on the IVC2 control unit or button 'S' of the external service button.
   ⇨ Display shows:



5. Press selection button [0].
   ⇨ Display shows:



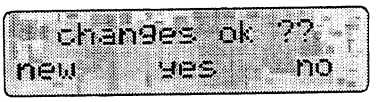
☑ You reached the technical menu. Now you can enter the shortcut number of requested point of menu. Further information about the technical menu, see page 17.

3.5 How to leave the technical menu with or without data storage

If you change settings in the technical menu by mistake you can restore previous state of the IVC2 control unit by leaving the technical menu without data storage, therefore:
Press button [R] and answer the dialog 'changes ok?' with button [3] for 'no'.

During programming of the IVC2 control unit it is usefull to carry out intermediate storage of the data, therefore:
Press button [R] and answer the dialog 'changes ok?' with button [2] for 'yes'.

1. When finished programming press button [R] and answer the dialog with button [2] for 'yes', changed settings are saved.



Button allocation:

[0]	call up 'GOTO'
[1] 'new'	to the start of the menu tree
[2] 'yes'	changed settings are saved
[3] 'no'	changed settings are not saved

4 Working with the basic menu

4.1 General information about the basic menu

The basic menu enables you to perform the most common programming and evaluations in a simple and rapid way. Vend prices can be simply entered and statistical messages can be accessed. The basic menu offers the following functions:

- Price programming
  - Displaying/changing single prices, see page 11.
- Displaying statistics
  - Displaying cash box contents, see page 13.
  - Displaying turnover, see page 13.
  - Displaying change paid out, see page 13.
  - Displaying amount of money in the tubes, see page 13.
  - Displaying revenues by means of the card system, see page 14.
  - Displaying number of sold products, see page 14.
  - Resetting statistics counters, see page 14.
- Printout
  - Print out statistics , see page 14.
- Clear statistics, see page 16.

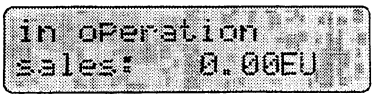
4.2 Change price settings (only in case of 1:1 assignment)

This menu enables you to set individual price for each compartment.

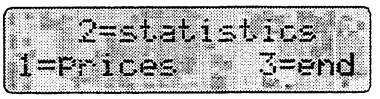
ATTENTION! Avoid incorrect settings
You may only change price settings in the basic menu if the vending machine operates in 1:1 assignment, i.e.:
selection 10 ⇨ motor 10 ⇨ price group 10 – selection 11 ⇨ motor 11 ⇨ price group 11 – etc.

4.2.1 Displaying/changing single prices

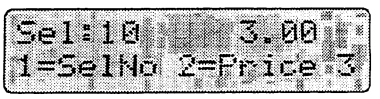
1. Open the machine door.
   ⇨ Display shows:



2. Press the red button 'SERVICE' on the IVC2 control unit or button 'S' of the external service button.
   ⇨ Display shows:



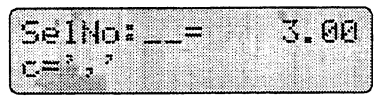
3. Press button [1] 'Prices'
   ⇨ Display shows:
   ⇨ Example: selection 10, 3.00 (=set price)
   The button allocation is shown as continual text in the lower row of the display
   ([1]=SelNo, [2]=Price, [3]=End).



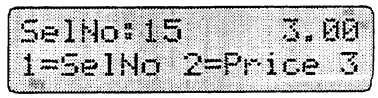
Button allocation in the basic menu:

- Button [1] for selecting a compartment (selection number)
- Button [2] for changing the price
- Button [3] for quitting the price programming
- Button [7] for selecting the previous compartment
- Button [9] for selecting the next compartment

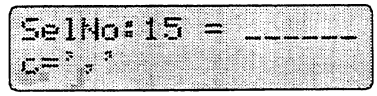
4. Press button [1] 'SelNo'.
⇨ Display shows:



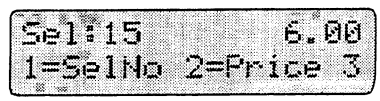
5. Enter number of compartment for which the price is to be changed - for example selection no. 15.
⇨ Display shows:



6. Press button [2] 'Price'.
⇨ Display shows:



7. Enter desired price for the compartment.
Button [C] places the decimal point,
e.g.: 6.00 = [6][C][0][0].
⇨ Display shows:



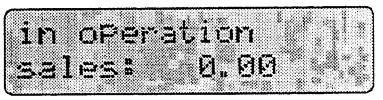
8. Press button [3] 'End'.
⇨ press once: you get back to step 2.
⇨ press twice: you leave the basic menu, changed prices are stored.

☑ Single prices are changed.

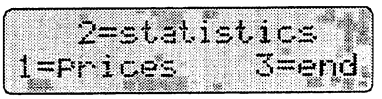
4.3 Statistics - display, printout and reset

This menu enables you to display, print out and reset all the relevant statistical values.

1. Open the machine door.
   ⇨ Display shows:

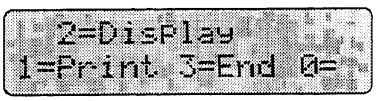


2. Press the red button 'SERVICE' on the IVC2 control unit or button 'S' of the external service button.
   ⇨ Display shows:
   ⇨ You reached the basic menu.



4.3.1 Display statistical data

1. Press button [2] „Statistics".
   ⇨ Display shows:
   Button allocation is shown as continual text in the lower row of the display ([1]=Print, [2]=Display, [3]=End, [0]=Clear).

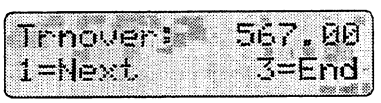


Display cash box contents

2. Press button [2] „Display".
   ⇨ Display shows:
   ⇨ Cash = cash box contents (cash box contents in cash).

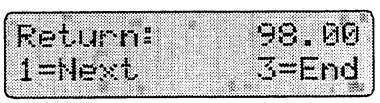
Display turnover

3. Press button [1] „Next".
   ⇨ Display shows:
   ⇨ Turnover = total sales (cash box contents in cash, money in tubes, payments by means of credit cards).



Display change paid out

4. Press button [1] „Next".
   ⇨ Display shows:
   ⇨ Return = change payout (money which was paid out off the tubes, hoppers etc.).

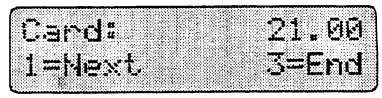


Display amount of money in the change tubes

5. Press button [1] „Next".
   ⇨ Display shows
   ⇨ Tubes = money in tubes (money in the tubes of the coin system).

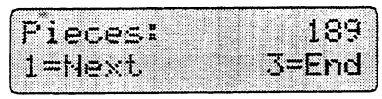
Display revenues of the card system

6. Press button [1] „Next".
   ⇨ Display shows:
   Card = money of credit cards
   (revenues of the card system).



Display total sum of all products sold

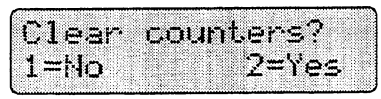
7. Press button [1] „Next".
   ⇨ Display shows:
   ⇨ Pieces
   (number of products sold).



Reset of counters

NOTE: If you do not want to reset the counters, quit this menu by pressing button [1] „No". If you reset the counters here, all the counters in the technical menu are reset to zero, too.

8. Press button [1] „Next".
   ⇨ Display shows:
   Button allocation is shown as continual text in the lower row of the display ([1]=No, [2]=Yes, [3]=End).



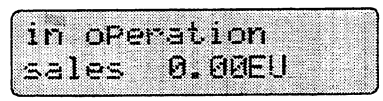
9. Press button [2] „Yes".
   ⇨ All statistic counters are reset.

10. Press button [3] „End".
    ⇨ press once: you return to step 2.
    ⇨ press twice: you quit the basic menu, counters are set to zero.

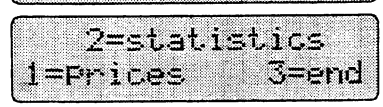
☑ All statitical values were displayed, the counters are reset.

4.3.2 Print out statistics

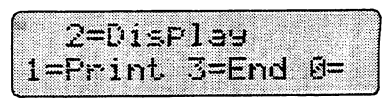
1. Open the machine door.
   ⇨ Display shows:



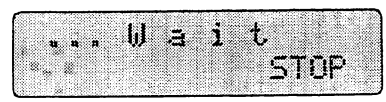
2. Press button 'SERVICE' on the IVC2 control unit.
   ⇨ Display shows:
   ⇨ You reached the basic menu.



3. Press button [2] 'Statistics'.
   ⇨ Display shows:
   Button allocation is shown as continual text in the lower row of the display ([1]=Print, [2]=Display, [3]=End, [0]=Clear).



4. Press button [1] ‚Print'.
   ⇨ Display shows:
   The connected printer starts printout of vend statistic.
   You can find further information in the IVC2 control unit decription.
   ⇨ When printout is finished press button [3] 'STOP'.



Vend statistics printout in the basic menu

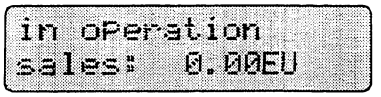
<START OF STATISTICS>	
**********	
* DEUTSCHE WURLITZER *	
05-13-2002 13:41:01	date and time of printout
PRINT NO. 14	number of the printout
ACTUAL ERROR: 0	actual error (if existing)
IVC2 V:2.45	software version of the IVC2 control
MACHINE NO. 41034510	serial number of the machine
LOCATION NO. 0000000010	number of the location
SECURITY NO. 23134	security number
**********	
MOT VND EMP TST TRNOVR	display of the motor number (MOT),
--- --- --- --- ------	number of vends (VND)
#10 44 4 2 132.00	number of empty vends (EMP),
#11 44 5 1 132.00	number of test vends (TST),
#12 45 4 1 135.00	turnover (TRNOVR)
#13 46 0 0 138.00	
#14 19 0 0 57.00	
#15 39 22 0 117.00	
#16 30 0 0 90.00	
#17 11 0 0 33.00	
#18 30 0 0 90.00	
#19 6 0 0 18.00	
#20 3 0 0 9.00	
#21 18 0 0 54.00	
#23 22 0 0 66.00	
#24 4 0 0 12.00	
#25 11 4 0 33.00	
#26 5 0 0 15.00	
#27 5 0 0 15.00	
#28 3 0 0 9.00	
#29 2 0 0 6.00	
#30 11 3 0 33.00	
#31 2 0 0 6.00	
#32 11 0 0 33.00	
#33 10 0 0 30.00	
#34 2 0 0 6.00	
#35 9 0 0 27.00	
#36 5 0 0 15.00	
#37 18 7 0 54.00	
#38 7 0 0 21.00	
#39 11 6 0 33.00	
#40 20 0 0 60.00	
#41 15 0 0 45.00	
#42 15 0 0 45.00	
#43 22 0 0 66.00	
#44 41 0 0 123.00	

SUM 586 55 4 1758.00	amount
COINS IN: 1263.00	amount of inserted coins
BILLS IN: 1055.00	amount of inserted bank notes
INPUT SUM: 2318.00	amount of inserted money
TURNOVER: 1758.00	turnover
CHANGER OUT: 560.00	amount of change
OUTPUT SUM: 2318.00	amount of returned money
BALANCE: 0.00	difference
IN CHANGER: 143.50	money in the coin system
IN CASHBOX: 1775.00	money in the cash box
TOTAL: 1918.50	sum

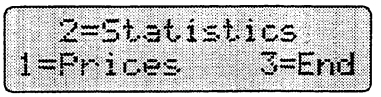
OVERPAID:	0.00	overpaid money
FILLED:	3.00	manuell filled money
MANUAL OUT:	2.00	manuell hand out money
**********		
<END OF STATISTICS>		

4.3.3 Clear statistic counters

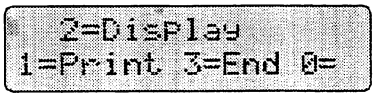
1. Open the machine door.
   ⇨ Display shows:



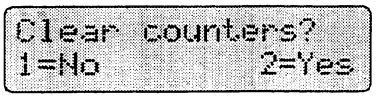
2. Press button 'SERVICE' on the IVC2 control unit.
   ⇨ Display shows:
   ⇨ You reached the basic menu.



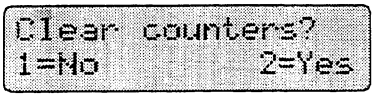
3. Press button [2] 'Statistics'.
   ⇨ Display shows:
   Button allocation is shown as continual text in the lower row of the display ([1]=Print,[2]=Display, [3]=End, [0]=Clear).



4. Press button [0] 'Clear'.
   ⇨ Display shows:
   Button allocation is shown as continual text in the lower row of the display ([1]=No, [2]=Yes, [3]=End).

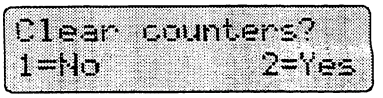


5. Press button [3] 'End'.
   ⇨ You return to step 2.



or

6. Press button [2] 'Yes'
   ⇨ All statistic counters will be reset, a scroll bar shows the process.



NOTE: The statistic counters can only be reset if the configuration 'VIDTS' is switched to 'OFF', see page 39.

7. Press button [3] „End".
   ⇨ press once: you return to step 2.
   ⇨ press twice: you quit the basic menu, counters are set to zero.

☑ All statistical counters are reset.

5 Working with the technical menu

General information about the technical menu
The technical menu enables you to operate all the functions of the IVC2 control unit. You can reach single points of the menus by means of shortcut numbers (in the following SCN). Matching points of the menu are grouped in loops.

NOTE: If you change settings in the technical menu by mistake you can restore previous state of the IVC2 control unit by leaving the technical menu without data storage, therefore:
Press button [R] and answer the dialog 'changes ok?' with button [3] for 'no'.

Technical menu - overview

5.1 Statistics

This menu section enables you to display various data about vend and error statistics, machine configuration and price settings and, if a printer is connected, print out these data.

Vend and error statistics can be reset individually or together.

Furthermore you can print out actual price settings and present machine configuration.

5.1.1 Resetable / non resetable counters

The vending machine has a great number of resetable counters, i.e. these counters can be reset individually or all together. Thus you get various statistical information about the period between the last reset and reading of the counters.

The vending machine also has a number of non resetable counters - shortcut numbers 3801 to 3820 (see overview see page 20). The shortcut numbers 3801 to 3820 contain the same counters as shortcut numbers 3701 to 3720. The difference between both counter groups is that group 3800 is non resetable. Thus you get statistical information about the whole life of the IVC2 control unit.

5.1.2 Summary of functions in this menu section

- Displaying statistical data
  - Vend counters
  - Money counters, see page 20.
- Printing statistical data
  - Printing sales statistics (vend and money counters), see page 21.
  - Printing error statistics, see page 23.
  - Printing machine configuration, see page 24.
  - Printing price settings, see page 25.
  - Printing currency configuration, see page 27.
- Resetting statistical data
  - Clear all statistical data (piece and money counters, error statistics), see page 28.
  - Clear single statistic counters, see page 28.

NOTE: If you clear the counters in the basic menu (see page 16), all resetable counters in the technical menu will also be reset.

5.1.3 Displaying statistical data

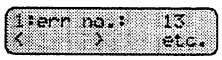
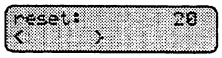
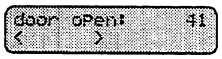
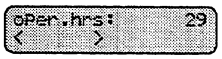
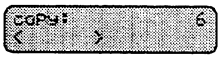
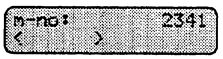
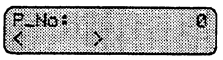
To display statistical counters call up the technical menu (see page 8) and enter the shortcut number of desired counter.

List of counters

The counters show frequence of all vend and machine relevant events. The table below shows the counters in detail.

NOTE: If you clear counters in the technical menu by mistake you can restore previous state of the IVC2 control unit by leaving the technical menu without data storage, therefore:
Press button [R] and answer the dialog 'changes ok?' with button [3] for 'no'.

Name	Short form	SCN	Decription . . .
Product counter per compartment WVZ:10= 0 0-9 ... CLR	WVZ	3400	Display shows number of products sold from selected compartment.
NOTE The following four counters SCN 3420 to 3423 are joined in a loop (see menu tree on page 3) and can be selected by pressing button [1] (one counter back in the loop) or button [2] (next counter in the loop).			
Counter of total products sold GVZ: 0 < > CLR	GVZ	3420	Display shows total number of products sold.
Counter of coins not accepted slug: 0 < > CLR For changer only.	slug	3421	Display shows number of coins not accepted by the MDB changer.
Selection empty counter WL:10= 2 0-9 > CLR	WL	3450	Display shows which compartments have been selected although they were empty.
Error counter error: 4= 9 < > back	error: [ ]	3510	This counter shows all the errors appeared. Each of the 99 possible errors is displayed according to the frequency of its occurence.

Name	Short form	SCN	Decription . . .
Error log book 	1:err no.:	3511	The last 30 errors can be displayed. By pressing button '3' a short descritpion and the time of occurence can be displayed.
NOTE The following eight counters SCN 3520 to 3527 are joined in a loop (see menu tree on page 3) and can be selected by pressing button [1] (one counter back in the loop) or button [2] (next counter in the loop).			
Counter for interruption of circuit 	reset	3520	Display shows how often the mains supply was interrupted.
Door open counter 	door open	3521	Display shows how often the door was opened..
Time counter 	oper.hrs:	3522	Display shows number of operating hours.
Counter for price memory copies 	copy	3523	Display shows number of price memory copies.
Machine number 	m-no	3524	Display shows the serial number of the machine.
Safety number 	safety no	3525	Display shows the safety number. This number will change if you exchange the lithium battery or delete the complete RAM memory.
Configuration number 	245xxxx.iv2	3526	Display shows the configuration number.
Place number 	P_No	3527	Here you can enter a max. 10 digit number for your machine identification. NOTE The loop SCN 3520 to 3527 ends here. If you press button '2' you'll return to the beginning of this loop.
Date and time display 		3551	Display shows date and time of the last 15 door openings.

List of money counters

The money counters display all important data about money insertion, change paid out, revenues by means of card systems, cash box contents etc.. The table below shows the counters in detail.

NOTE: If you clear counters in the technical menu by mistake you can restore previous state of the IVC2 control unit by leaving the technical menu without data storage, therefore:
Press button [R] and answer the dialog 'changes ok?' with button [3] for 'no'..

Name	Short from	SCN	Description...
Coin insertion counter coin: 1= 0 0-9 > CLR 16 coin channels can be displayed.	coin	3610	Display shows number of inserted coins per selected coin channel.
Note insertion counter note: 1 = 0 < > CLR 16 note channels can be displayed.	note	3611	Display shows number of inserted bank notes per selected note channel (for MDB systems only).
Coin counter of MDB coin system Tube: 1= 0 < > CLR	tube	3620	Display shows number of coins in selected changer tube.
Coin return counter of MDB coin system Tube: 1= 0 < > CLR	tube	3630	Display shows number of coins returned from selected changer tube.
NOTE • The SCN 3801 to 3820 contain the same counters as SCN 3701 to 3720. The difference between both counter groups is that group 3800 is non resetable. Thus you get statistical information about the IVC2 control unit. • The following money counters SCN 3701 (3801) to 3720 (3820) are joined in a loop (see menu treeon page 3) and can be selected by pressing button [1] (one counter back in the loop) or button [2] (next counter in the loop).			
Sales counter VKR: 0.00 < > CLR	VKR (VKZ)	3701 (3801)	Display shows turnover of all products sold.
Cash box counter KIR: 0.00 < > CLR	KIR (KTZ)	3702 (3802)	Display shows cash box contents.
Inserted money GZR: 0.00 < > CLR	GZR (GZE)	3703 (3803)	Display shows amount of inserted money during 'Insert exact money' mode.
Counter for returned coins ROR: 0.00 < > CLR	ROR (ROZ)	3704 (3804)	Display shows amount of return coins from the changer tubes.
Change counter GRR: 0.00 < > CLR	GRR (GRZ)	3705 (3805)	Display shows amount of returned money after pressing the return button.
Service change counter MUR: 0.00 < > CLR	MUR (MUT)	3706 (3806)	Display shows amount of money paid out for test and adjustment purposes (with opened machine door).
Service money insertion counter MIR: 0.00 < > CLR	MIR (MIN)	3707 (3807)	Display shows amount of money inserted for test and adjustment purposes (with opened machine door).

Name	Short from	SCN	Description . . .
Overpaid money OPAR: 0.00 < > CLR	OPAR (OPA)	3708 (3808)	Display shows amount of overpaid money that was inserted during 'Insert exact money' mode.
Revenue of card system CPCR: 0.00 < > CLR	CPCR (CPC)	3710 (3810)	Display shows amount of money received through payment with card.

5.1.4 Print out of statistical data

NOTE: The statistics printer is not part of the standard machine. If you have a printer you have to connect and configure it, further information on page 80.
In case a receipt printer is installed you can also use it for print out of statistical data.

You can print out lists of the following subjects:

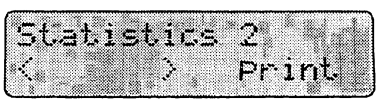
- Vend statistics (piece and money counters) SCN 3300
- Error statistics SCN 3301
- Machine configuration SCN 3302
- Price settings SCN 3303
- Currency configuration SCN 3304

The four statistical lists of SCN 3300 to 3304 are joined in a loop (see menu tree on page 3) and can be selected by pressing button [1] (previous list) or button [2] (next list). The statistical lists SCN 3300 to 3303 are described on the following pages.

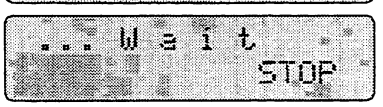
Print out of vend statistics (vend and money counters)
In the vend statistics all piece and money counters are listed. To print out vend statistics call up the technical menu (see page 8) and then the print menu for 'Statistics 2'.

Therefore proceed as follows:

1. Call up **SCN 3300**.
   ⇨ Display shows:



2. Press button [3] for 'print'.
   ⇨ Display shows:
   ⇨ Data will be transfered and printed.
   ⇨ Note: By pressing button [3] „STOP“ you can stop printing.



3. To quit the print menu press button [R].

NOTE: You can find an example of the printout with explanations on the folllowing page.

Printout of vend statistics in the technical menu

<START OF STATISTICS>	
==========	
* DEUTSCHE WURLITZER *	
05-13-2002 13:41:01	date and time of printout
PRINT NO. 14	number of the printout
ACTUAL ERROR: 0	actual error (if existing)
IVC2 V:2.45	software version of the IVC2 control
MACHINE NO. 41034510	serial number of the machine
LOCATION NO. 0000000010	number of the location
SECURITY NO. 23134	security number
==========	
COIN INPUT:	inserted coins
COIN CNT VAL	coin (COIN), number of (CNT),
1.00 423 423.00	value (VAL)
2.00 420 840.00	

SUM 1263.00	amount
==========	
BILL INPUT:	inserted bank notes
BILL CNT VAL	bank note (BILL), number of (CNT),
5.00 211 1055.00	value (VAL)
10.00 55 550.00	

SUM 1605.00	amount
==========	
IN CASHBOX: 1775.00	amount in the cash box
==========	
CHANGER OUT:	returned money
COIN CNT VAL	coin (COIN), number of (CNT),
1.00 80 80.00	value (VAL)
2.00 240 480.00	

SUM 560.00	amount
==========	
CHANGER TUBE LEVELS:	tube stock of the changer
COIN CNT VAL	coin (COIN), number of (CNT),
0.50 23 11.50	value (VAL)
1.00 44 44.00	
2.00 44 88.00	

SUM 143.50	amount
==========	
METERS (RESETABLE):	resertable counters
TURNOVER: 1758.00	turnover
IN CASHBOX: 1775.00	cash box contents
DISPENSED: 564.00	returned money
IN CHANGER: 6.00	money in the changer
MANUAL OUT: 2.00	manuell returned money
MANUAL IN: 3.00	manuell inserted money
OVERPAID: 0.00	overpaid money

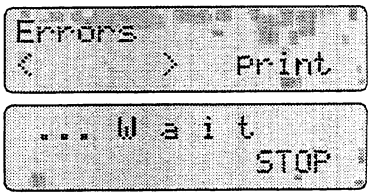
METERS (NON-RESETABLE):	NON-resertable counters
TURNOVER: 2406.00	total turnover
IN CASHBOX: 2437.50	total cash box contents
DISPENSED: 774.00	total returned money
IN CHANGER: 143.50	total money in the changer
MANUAL OUT: 221.50	total manuell returned money
MANUAL IN: 396.50	total manuell inserted money
OVERPAID: 0.00	total overpaid money
==========	
<END OF STATISTICS2>	

Print out of error statistics

The list of error statistics contains the last 30 errors (0 - 29) with date, time and a short description. To print out the error statistics call up the technical menu (see page 8) and then the print menu for 'Errors'.

Therefore proceed as follows:

1. Call up SCN **3301**.
   ⇨ Display shows:



2. Press button [3] 'print'.
   ⇨ Display shows:
   ⇨ Data will be transfered and printed.
   ⇨ Note: By pressing button [3] „STOP" you can stop printing.

3. To quit the menu press button [R].

Printout of errors

```
<START OF ERRORS>
=======================
 * DEUTSCHE WURLITZER *
06-13-2002      16:45:01
PRINT NO.             14
ACTUAL ERROR:          0

IVC2               V:2.45
MACHINE  NO.    41034510
LOCATION NO. 0000000010
SECURITY NO.       23134
=======================
POWERUPS:             15
RAM-COPIES:            2
OPERAT.HOURS:        243
=======================
LOGGED ERRORS:
ERR 11  06-13-02  16:53
ERR 90  06-13-02  16:52
ERR 77  06-13-02  16:52
ERR 99  06-13-02  08:17
=======================
DOOR OPEN:
1:      06-13-02    13:39
2:      06-13-02    13:17
3:      06-13-02    13:05
4:      06-13-02    14:54
5:      06-13-02    14:42
6:      05-28-02    14:41
7:      05-26-02    14:14
8:      05-13-02    10:45
9:      05-04-02    10:45
10:     04-30-02    10:45
11:     04-21-02    10:44
12:     04-12-02    10:43
=======================
<END OF ERRORS>
```

date and time of printout
number of the printout
actual error (if existing)

software version of the IVC2 control
serial number of the machine
number of the location
security number

number of powerups
number of RAM copies
number of operating hours

detected errors with date and time

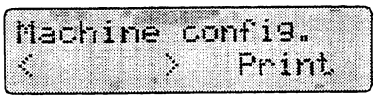
door openings with date and time

Print out of machine configuartion settings

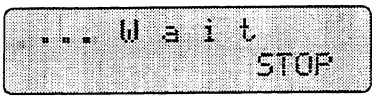
You can print out machine configuration settings for checking purposes and error search. To print out the settings call up the technical menu (see page 8) and then the print menu for 'Machine config.'.

Therefore proceed as follows:

1. Call up SCN **3302**.
   ⇨ Display shows:



2. Press button [3] 'print'.
   ⇨ Display shows:
   ⇨ Data will be transfered and printed.
   ⇨ Note: By pressing button [3] „STOP" you can stop printing.



3. To quit the menu press button [R].

Machine configuartion printout

```
<START OF MACH.CONFIG.>
=======================
 * DEUTSCHE WURLITZER *
05-13-2002     13:41:01
PRINT NO.             14
ACTUAL ERROR:          0

IVC2               V:2.45
MACHINE  NO.   41034510
LOCATION NO. 0000000010
SECURITY NO.       23134
=======================
LANGUAGE:              D
VENDOR TYPE:  CIGARETTE
VEND MODE:   MULTI VEND
VEND REQUIREED:       NO
EXACT MONEY:         YES
RETURN CHANGE:    NORMAL
CREDIT FORMAT:  6-DIGIT
DECIMAL DOT:          ON
SELECTION:      2-DIGIT
COIN VALIDATION:    MDB
ESCROW UNIT:          OFF
VEND INFO:     TURNOVER
LIGHT GATE #1:        OFF
LIGHT GATE #2:        OFF
LIGHT GATE #3:        OFF
MOT-STOP ON CASH:     NO
SOLD OUT:         IGNORE
ELEVATOR:             OFF
SMOKER ID-CARD:       NO
TIME DISPLAY:         OFF
VIDTS:              PULSE
=======================
RECEIPT PRINTER:      OFF
BAUDRATE:      4800 BAUD
DATA BITS:             8
STOP BITS:             1
PARITY:             EVEN
AUTO-LINEFEED:        ON
PRINT DELAY:      750 MS
CUTTER CMD:    00 00 00
=======================
```

date and time of printout
number of the printout
actual error (if existing)

software version of the IVC2 control
serial number of the machine
number of the location
security number

set language
type of machine
vend mode
obligation to buy
insert exact price
return money
credit display (here in 6 digits)
decimal point
selection display (here in 2 digits)
protocol of the coin system
escrow unit
display while powerup the machine
vend light gate 1
vend light gate 2
vend light gate 3
motor stop on cash
sold our comartment
operation with elevator (SmartWaiter)
smokers identification card
display of actual time
protocol for read-out of data

receipt printer
Baud rate
rate of data transfer
number of stop bits
parity
automatic line feed
print delay
cutter

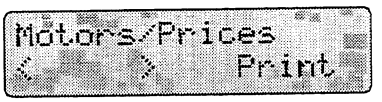
```
EMPTY/PRICE DISPL:   OFF
BAUDRATE:      19200 BAUD
DATA BITS:             8
PARITY:              ODD
=======================
PC BAUDRATE:   115 KBAUD
DATA BITS:             7
PARITY:             EVEN
=======================
<END OF MACH.CONFIG.>
```

Print out of motor and price settings

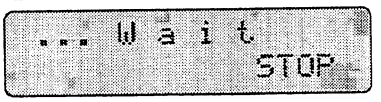
For checking purposes or error search you can print out all motor and price settings. To print out the settings call up the technical menu (see page 8) and then the print menu for 'Motors/Prices'.

Therefore proceed as follows:

1. Call up SCN **3303**.
   ⇨ Display shows:



2. Press button [3] 'start'.
   ⇨ Display shows:
   ⇨ Data will be transfered and printed.
   ⇨ Note: By pressing button [3] „STOP“ you can stop printing.



3. To quit the menu press button [R].

NOTE: You can find an example of the printout with explanations on the folllowing page.

Motors/Prices settings printout

```
<START OF MOTOR/PRICE>
======================
 * DEUTSCHE WURLITZER *
05-13-2002     13:41:01
PRINT NO.             14
ACTUAL ERROR:          0

IVC2               V:2.45
MACHINE  NO.   41034510
LOCATION NO. 0000000010
SECURITY NO.       23134
======================
SELECT.-MOTOR MAPPING:
SEL     MOT
----------------------
#11 >> M10
#12 >> M10
#22 >> M23
#45 >> M44
======================
MOTOR CHAINS:
----------------------
M10 >> M11
M11 >> M12
M12 >> M10
======================
MOTORS PARALLEL:
----------------------
NONE
======================
SEL   MOT   PRGRP   PRICE
---   ---   -----   -----
#10    10     10    3.00
#11    10     10    3.00
#12    10     10    3.00
#13    13     10    3.00
#14    14     14    3.00
#15    15     15    3.00
#16    16     16    3.00
#17    17     17    3.00
#18    18     18    3.00
#19    19     19    3.00
#20    20     20    3.00
#21    21     21    3.00
#22    23     23    3.00
#23    23     23    3.00
#24    24     24    3.00
#25    25     25    3.00
#26    26     26    3.00
#27    27     27    3.00
#28    28     28    3.00
#29    29     29    3.00
#30    30     30    3.00
#31    31     31    3.00
#32    32     32    3.00
#33    33     33    3.00
#34    34     34    3.00
#35    35     35    3.00
#36    36     36    3.00
#37    37     37    3.00
#38    38     38    3.00
#39    39     39    3.00
#40    40     40    3.00
#41    41     41    3.00
#42    42     42    3.00
#43    43     43    3.00
#44    44     44    3.00
#45    45     45    3.00
======================
<END OF MOTOR/PRICE>
```

date and time of printout
number of the printout
actual error (if existing)

software version of the IVC2 control
serial number of the machine
number of the location
security number

selection-motor assignment
selection (SEL), motor (MOT)

selection 11 assigned to motor 10
selection 12 assigned to motor 10
selection 22 assigned to motor 23
selection 45 assigned to motor 44

linked motors

motor 10 linked to motor 11
motor 11 linked to motor 12
motor 12 linked to motor 10
= compartments sold regularly
motors in parallel operation

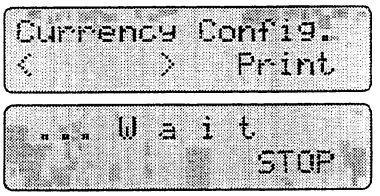
selection-motor-price group assignement
selection (SEL), motor (MOT), price group (PRGRP) and set price (PRICES)

Print out of currency configuration

For checking purposes or error search you can print out all currency settings.

To print out the settings call up the technical menu (see page 8) and then proceed as follows:

1. Call up SCN **3304**.
   ⇨ Display shows:



2. Press button [3] 'start'.
   ⇨ Display shows:
   ⇨ Data will be transfered and printed.
   ⇨ Note: By pressing button [3] „STOP" you can stop printing.

3. To quit the menu press button [R].

Currency configuration printout

```
<START OF CURR.CONFIG>
======================
 * DEUTSCHE WURLITZER *
05-13-2002      13:41:01
PRINT NO.             14
ACTUAL ERROR:          0

IVC2               V:2.45
MACHINE  NO.    41034510
LOCATION NO. 0000000010
SECURITY NO.       23134
======================
CURRENCY:            EURO
CPC-CURRENCY:        EURO
DISPLAY:             EURO
ACCEPT:              EURO
EURO-CF:         1.000000
======================
MAX. CREDIT:        10.00
MAX. CHANGE:         7.00
======================
CHANGER INPUT SETTINGS:
CHA  CVALUE CUR ATT LIM
---  ------ --- --- ---
#01    0.50 EUR TUB   0
#02    0.50 EUR BOX  30
#03    1.00 EUR TUB  30
#04    1.00 EUR BOX  30
#05    2.00 EUR TUB  30
#06    2.50 EUR BOX  30
======================
CHANGER OUTP. SETTINGS:
CHA  CVALUE CUR ATT LIM
---  ------ --- --- ---
#01    0.50 EUR  ON ---
#02    1.00 EUR  ON ---
#03    2.00 EUR  ON ---
======================
BILL INPUT SETTINGS:
CHA  BVALUE CUR ATT LIM
---  ------ --- --- ---
#01    5.00 EUR BOX  10
#02   10.00 EUR BOX   5
======================
<END OF CURR.CONFIG>
```

date and time of printout
number of the printout
actual error (if existing)

software version of the IVC2 control
serial number of the machine
number of the location
security number

set currency
currency of the card reader
displayed currency
accepted currency

maximum credit
maximum return

changer input settings
coin channel (CHA), coin denomination (CVALUE), coin currency (CUR), coin goes into tube (TUB) or into cash box (BOX), number of coins that will be accepted for a vend (LIM)

changer output settings
coin channel (CHA), coin denomination (CVALUE), coin currency (CUR)
coin option (channel on or off =ATT), max. number of coins to be accepted (LIM)

settings of the bank note acceptor
bank note channel (CHA), bank note denomination (BVALUE), bank note currency (CUR), bank note option (bank note into cash box or channel locked = ATT), max. number of bank notes to be accepted (LIM)

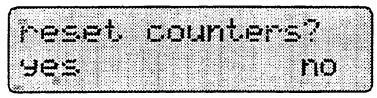
5.1.5 Clear statistical data

NOTE: The statistics counters can only be cleared if 'VIDTS' in the configuration is set to OFF (see page 39).

Clear all statistical data (money/vend counters and error statistics)
This menu enables you to clear all statistical data (vend and error statistics) at the same time.

Call up the technical menu and proceed as follows:

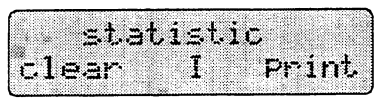
1. Call up **SCN 3100**.
   ⇨ Display shows:



2. Press button [1] 'yes'.
   ⇨ All resetable counters will be cleared.
   ⇨ A scroll bar shows the process.

   or

   Press button [3] 'no'.
   ⇨ Display shows the main menu.



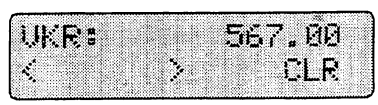
3. To quit the menu press button [R].

Clear single statistics counters
This menu enables you to clear single counters of the vend and error statistics. Therefore you will need the shortcut number of requested counter. In the following you will find a summary of resetable counters:

- for vend counters see page 18.
- for money counters see page 20.

Call up the technical menu and proceed as follows:

1. Enter **SCN** of requested counter,
   here e.g. SCN 3701 (sales counter).
   ⇨ Display shows:



2. Press button [3] to clear the counter.
   ⇨ Counter will be reset.

3. To quit the menu press button [R].

5.2 Machine tests

Introduction – SCN 4000
This menu enables you to carry out different machine tests, single subassemblies can be tested individually.

NOTE: If you change settings in the technical menu by mistake you can restore previous state of the IVC2 control unit by leaving the technical menu without data storage, therefore:
Press button [R] and answer the dialog 'changes ok?' with button [3] for 'no'.

5.2.1 Summary of machine tests

	snack machine	cigarette machine
• Testing single subassemblies		
◦ Test of the escrow unit, see page 30.		×
◦ Test of the coin system (only for electronic coin acceptor systems), see page 30.		×
◦ Test of the bank note acceptor (only for MDB), see page 31.	×	×
◦ Test of the reject motor, see page 31.	×	×
◦ Test of the string catcher, see page 32.		×
◦ Test of the display, see page 32.	×	×
◦ Test of the vend light gate, see page 33.	×	
• Testing motors		
◦ Test of single motors, see page 34.	×	×
◦ Main motor test, see page 35.	×	×

5.2.2 Testing single subassemblies – SCN 4100

NOTE: The following eight SCN 4101 to 4108 joined in a loop (see page 2) and can be selected by pressing button [1] (previous point of the loop) or button [2] (next point in the loop).

Test of the escrow unit
This menu enables you to test function of the escrow unit in both rotating directions. This test can only be performed if the escrow unit is switched on during configuration (SCN 5107), see page 37. If error messages occur before or during testing (error no. 11 to 14) you can look for an error description and remedy in the error logbook see page 77.

Call up technical menu and proceed as follows:

1. Enter **SCN 4101**.
   ⇨ Display shows:

2. Press button [3] 'start'.
   ⇨ Display shows:

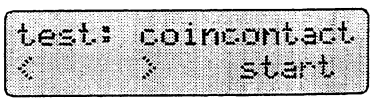
3. Start the test by pressing button [1] or [3].
   [1] „<-“ escrow unit rotates in direction cash box.
   [2] „STOP“ interruption and step to the next point of the loop.
   [3] „->“ escrow unit rotates in direction change payout.

4. To quit the menu press button [R].

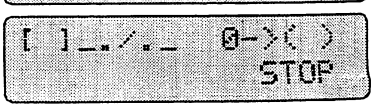
Test of the coin system (only for electronic coin acceptor systems)
This menu enables you to find out which coin denomination is assigned to which coin channel. In case the IVC2 control unit is already set to national currency, display shows number of the coin channel and assigned coin denomination. If only the number of the coin channel is displayed, you have to enter corresponding coin denomination under SCN 4014 (see page 46).

Call up technical menu and proceed as follows:

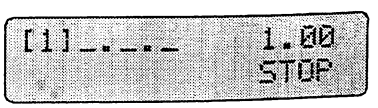
1. Enter **SCN 4102**.
   ⇨ Display shows:



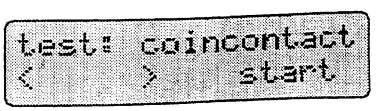
2. Press button [3] 'start'.
   ⇨ Display shows:



3. Insert a coin. In the coin is accepted the display changes, e.g. for insertion of a coin with denomination of one monetary unit:
   ⇨ Brackets on LH side showing number of the coin channel.
   ⇨ On upper RH side display shows denomination of inserted coin.
   ⇨ Once the display is blank, you can insert further coins.



4. To stop the test press button [3] 'STOP'.
   ⇨ Display shows:



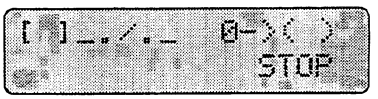
5. To quit the menu press button [R].

Test of the bank note acceptor (only for MDB)
This menu enables you to find out which bank note denomination is assigned to which bank note channel. In case the IVC2 control unit is already set to national currency, display shows number of the bank note channel and assigned bank note denomination. If only the number of the bank note channel is displayed, you have to enter corresponding bank note denomination under SCN 7018.

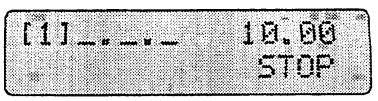
Call up technical menu and proceed as follows:

1. Enter **SCN 4103.**
   ⇨ Display shows:

2. Press button [3] 'start'.
   ⇨ Display shows:



3. Insert a bank note. In the bank note is accepted the display changes, e.g. for insertion of a bank note with denomination of ten monetary unit:
   ⇨ Brackets on LH side showing number of the bank note channel.
   ⇨ On upper RH side display shows denomination of inserted bank note.
   ⇨ Once the display is blank, you can insert further bank notes.



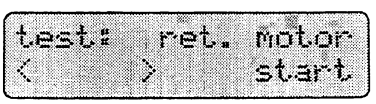
4. To stop the test press button [3] 'STOP'.
   ⇨ Display shows:

5. To quit the menu press button [R].

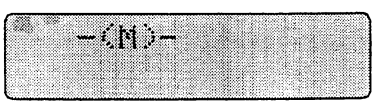
Test of the reject motor
This menu enables you to test the function of the reject motor.

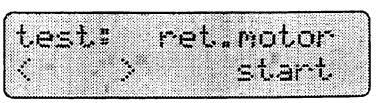
Call up technical menu and proceed as follows:

1. Enter **SCN 4104.**
   ⇨ Display shows:



2. Press button [3] 'start'.
   ⇨ Display shows:
   ⇨ If the motor is ok it will start.
   ⇨ Then display shows again:



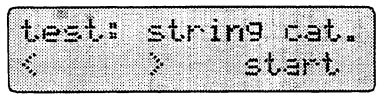


3. To quit the menu press button [R].

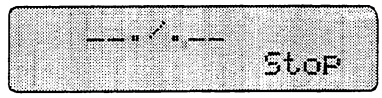
Test of the string catcher (only for cigarette machines)
This menu enables you to testfunction of the string catcher.

Call up technical menu and proceed as follows:

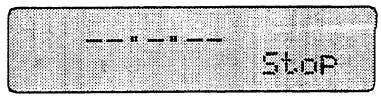
1. Enter **SCN 4105**.
   ⇨ Display shows:



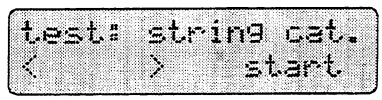
2. Press button [3] 'start'.
   ⇨ Display shows:
   ⇨ The switch is displayed in an open position.



3. Actuate the string catcher.
   ⇨ Display shows:
   ⇨ The string was detected and display shows the switch in a closed position.



4. Press button [3] 'stop'.
   ⇨ You finished the test.
   ⇨ Display shows again:



5. To quit the menu press button [R].

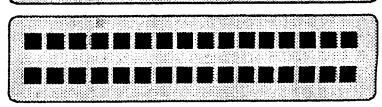
Test of the tilt switch
The test of the tilt switch **SCN 4106** is reserved for future machine versions. Go to the next point of this loop.

Test of the display
This menu enables you to test function of the display and for displaying the actual program version of the IVC2 control unit.

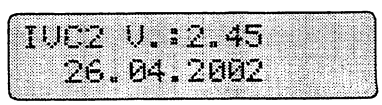
Call up technical menu and proceed as follows:

1. Enter **SCN 4107**.
   ⇨ *Display shows:*

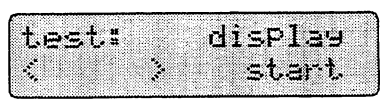
2. Press button [3] 'start'.
   ⇨ The complete display is triggered so that defective areas can be seen.



   ⇨ The display indicates the actual program version for about 5 seconds.



   ⇨ Then the display shows again:

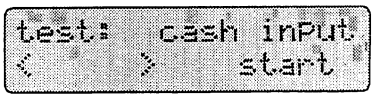


3. To quit the menu press button [R].

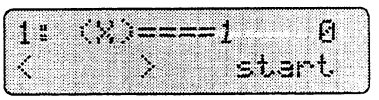
Test of the vend light gate
The IVC2 control unit is able to manage three vend light gate.

Call up technical menu and proceed as follows:

1. Enter **SCN 4108**.
   ⇨ Display shows:

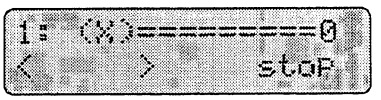


2. Press button [3] 'start'.
   ⇨ Display shows:

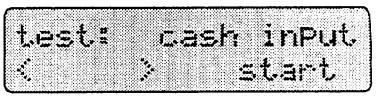


3. Select requested vend light gate by means of the buttons [1] or [2].

4. Actuate the vend light gate.
   ⇨ With proper function display shows:



5. Press button [3] 'stop'.
   ⇨ You finished the test.
   ⇨ Display shows:



6. To quit the menu press button [R].

5.2.3 Testing motors – SCN 4200

This menu enables you to test motors of the compartments. You can test single motors or you can carry out a main-motor-test.

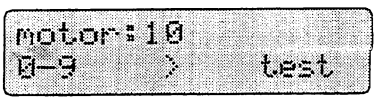
Test of single motors

This menu enables you to test single motors in a direct way. If a motor is disabled, no vend from corresponding compartment will be possible and when selected the display will show [MAKE ANOTHER SELECTION].

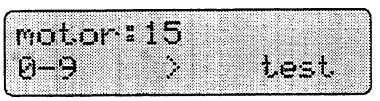
NOTE: (only for cigarette machines) Only perform the single motor test if corresponding compartment is filled with at least 2 packs.

Call *up technical* menu and proceed as follows:

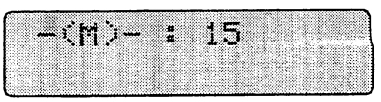
1. Enter **SCVN 4210.**
   ⇨ Display shows:

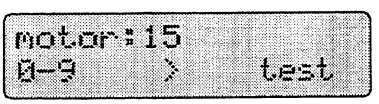


2. Enter number of requested motor here e.g. motor 15.
   ⇨ Display shows:

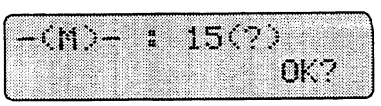


3. Press button [3] 'test'.
   ⇨ Display shows:
   ⇨ Selected motor is tested.
   ⇨ One pack is delivered.
   ⇨ Then display shows:
   ⇨ You could now select another motor or proceed with step 4 to quit the menu.





If a motor can not be triggered,
(motor defective, disconnected, stuck or no product in the compartment) display shows a question mark after the motor number.
Press button [3] 'OK?'.



4. To quit the menu press button [R].

NOTE: This single motor test inspects only the function of the motors. If a selection is disabled, it will not be released automatically by this test.

Main motor test

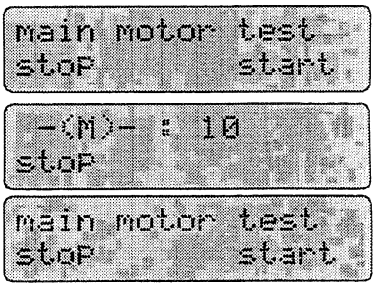
This menu enables you to test all motors and also lock or release motors (see also menu 'motor options' SCN 5200 see page 41). In case a motor is locked, the corresponding compartment is disabled for vending and when selected the display shows [MAKE ANOTHER SELECTION]

Purpose of the main motor test is to test and switch on all existing motors and to switch off all theoretically possible but not present motors in case of new configuration.

NOTE: (only for cigarette machines) Only perform the main motor test if compartments are filled with at least 2 packs. Otherwise motors will be locked automatically.

Call up technical menu and proceed as follows:

1. Enter **SCN 4220**.
   ⇨ Display shows:



2. Press button [3] 'start'.
   ⇨ The IVC2 control unit tests all motors one after another.
   ⇨ Top RH side of the display shows actual tested motor.
   ⇨ When all motors are tested or you press button [1] 'stop' during the test, display shows:
   ⇨ Motors that could be triggered are released now (state 'released').
   ⇨ Motors that could not be triggered are locked now (state 'locked', see page 41).

3. To quit the menu press button [R].

5.3 Machine configuration

Introduction – SCN 5000
This menu enables you to configure the machine.

Change single machine setting
The menu sections 'configuration 1' and 'configuration 2' offer you the possibility to change single configuration settings.The tables on the following pages contain information about the different *menus.*

Re-programming of the IVC2 control unit
When carried out basic configuration, the IVC2 control unit has to be programmed according to its requirements.

Select required part of the menu by means of the shortcut numbers (SCN), see menu tree on page 2.

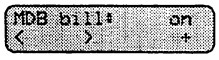
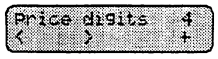
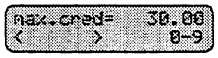
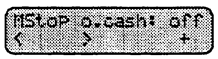
NOTE: If you change settings in the technical menu by mistake you can restore previous state of the IVC2 control unit by leaving the technical menu without data storage, therefore:
Press button [R] and answer the dialog 'changes ok?' with button [3] for 'no'.

5.3.1 Summary of functions in the menu section

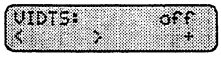
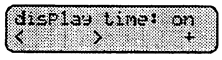
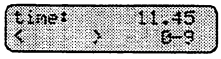
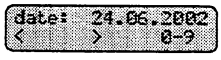
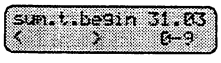
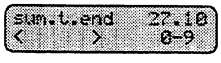
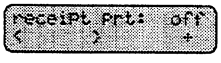
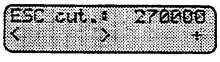
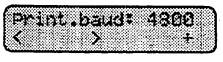
- Configuration part 1: contents, see page 37.
- Configuration part 2: contents, see page 39.
- Motor options
  - define motor state, see page 41.
  - define motor groups, see page 43.
  - selection - motor assignment, see page 44.
- Reprogramming of the IVC2 control unit, see page 71.

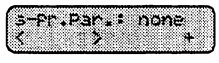
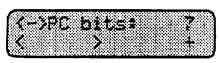
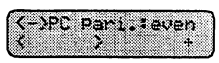
5.3.2 Configuration part 1

Name	SCN	Possible settings	Description
NOTE The following 27 menus SCN 5100 to 5126 are assembled in one loop (see menu tree see page 2) and can be selected by pressing button [1] (one counter back in the loop) or button [2] (next point in the loop).			
Language setting language: D < > +	5100	• german • english • french • editor	Here you can select language of the display. The languages German, English and French are contained in the IVC2 control unit by default. Furthermore you can select 'editor' (Changeable language) to change existing texts.
Model setting model: ZA < > +	5101	• cigar. VM • Snack • Newspaper • Newspaper1	Here you can set model type of the machine. Default settings are cigarette, snack or newspaper vending machine.
Change giver change giv.: aut. < > +	5102	• automatic • normal • 60 sec. • none	**Automatic:** Change is paid out after the vend automatically. **Normal:** Change is paid out after pressing return button 'R'. **60 sec.:** Change is paid out inbetween 60sec. only, after that, credit is deleted. **None:** No change paid out, overpaid money is lost.
Single vend single vend: off < > +	5103	• on • off	Here you can switch on or off single vend.
Obligation to buy vend requir.: off < > +	5104	• on • off	Here you can switch on or off obligation to buy. With active obligation to buy a vend has to be made before change is paid out.
Exact money exact money: off < > +	5105	• on • off	Here you can switch on or off exact money. With active exact money you have to insert exact price has to be inserted, no overpayment possible.
Electronic coin acceptor coin accept.: off < > +	5106	• on • off	Here you can switch on or off the electronic coin acceptor. ⚠ ATTENTION! Switch off for operation with MDB coin system.
ESCROW escrow unit: off < > +	5107	• on • off	Here you can switch on or off the escrow unit. The escrow unit keeps inserted money until a selection has been made or return button 'R' has been pressed. Afterwards money goes either to the cash box or change tubes.
MDB changer MDB changer: on < > +	5108	• on • off • AltPayO	Here you can switch on or off the MDB coin system. If you set option 'AltPayO', coins that going directly into the cashbox will still be accepted even though change tubes filled insufficiently. Thus causes danger in loss of return money. ⚠ ATTENTION! Switch off for operation with electronic coin acceptor.
MDB data retrieval MDB data retrie. < > start	5109	• start	If a system with MDB protocol is installed, e.g. coin system, card reader, bank note acceptor etc. you have to carry out data retrieval.
MDB card reader MDB card: on < > +	5110	• on • off	Here you can switch on or off the MDB card reader.

Name	SCN	Possible settings	Description
MDB bank note acceptor 	5111	• on • off	Here you can switch on or off the MDB bank note acceptor.
DW changer 	5113	• on • off • on/cnt	Here you can switch on or off DW (Deutsche Wurlitzer) changer systems (5 tube changer, hopper). If you switch to 'on/cnt', both the system and empty stop counter are active.
Decimal point 	5114	• on • off	Here you can switch on or off the decimal point.
Price digits 	5115	• 4 • 6	Here you can set number of digits prices can be programmed. You can choose between 4 and 6 digits. Example: 10.00 = 4 digits 1000.00 = 6 digits
Maximum return 	5116	Amount to be entered via the keyboard.	Here you can enter maximum amount of return money.
Maximum credit 	5117	Amount to be entered via the keyboard.	Here you can enter maximum amount to be accepted before a vend: for single vend: price of most expensive product for multi vend: alternatively higher
Vend light gate 1 	5118	• on • off	For snack and newspaper vending machines the vend light gate has to be switched on.
Vend light gate 2 	5119	• on • off	For machines with two vend light gates.
Vend light gate 3 	5120	• on • off	For machines with three vend light gates.
Ejector motor 	5121	• on • off	For newspaper vending machines this option has to be switched on.
Digits of selection 	5122	• 1 digit (newspaper vending machine) • 2 digits (cigarette or snack vending machine)	Here you can enter number of digits to be used for a selection.
Data transfer 	5123	• start	Is provided for communication between IVC2 control unit and a PC.
SmokerIDCard 	5124	• on • off	Here you can switch on or off smokers identification card.
Elevator 	5125	• on • off	Here you can switch on or off the elevator 'SmartWaiter' for snack machines.
Motor empty 	5126	• ignore • store	For machines with empty compartment indication (SCN 5316) you can switch on or off this option. ignore: no message 'empty' will be displayed and the empty compartment indication is off. store: the message 'empty' from a single compartment will be displayed and the empty compartment indication is active.

5.3.3 Configuration part 2

Name	SCN	Possible settings	Description
NOTE The following 25 menus SCN 5300 to 5324 are assembled in one loop (see menu treeon page 2) and can be selected by pressing button [1] (previous point of the menu) or button [2] (next point in the loop).			
VIDTS 	5300	• off • IRDA • PulsLight	VIDTS is a transmission protocol to transfer data. Therefore you need a data reading device with an infrared interface. Here you can select data transmission mode, depending on the reading device: • off, no data transmission • IRDA, transmission rate 115000baud • pulse, transmission rate 2400baud NOTE Only if this menu is switched to off, statistical data can be cleared manually.
Clear VIDTS 	5301	• CLR	Here you can clear data. Therefore you need a password.
Time/date on/off 	5302	• on • off	Here you can switch on or off the display of time and date.
Time input 	5303	Enter actual time via keyboard.	Here you can enter or change the actual time. The IVC2 control unit is equipped with a Real-Time-*Clock (RTC), the* internal time runs even the machine is switched off.
Date input 	5304	Enter actual date via keyboard.	Here you can enter or change the actual date.
Summer time (fixed day) 	5305	• auto • fix	Here you can determine whether summer time should be displayed automatically or at a fixed day. If you choose 'fixed day', you'll have to enter beginning and end in the following to points of the menu.
Summer time start 	5306	Enter the date via keyboard.	Here you can enter beginning of the summer *time.*
Summer time end 	5307	Enter the date via keyboard.	Here you can enter end of the summer time.
Print out receipt 	5308	• on • off	Has to be switched on if a statistics printer is connected.
Cut receipt 	5309	Enter value via keyboard.	Printer specific setting.
Statistics printer baud 	5310	• 110 • 19200 • 9600 • 4800 • 2400 • 1200	Here you can select transmission rate of the statistics printer, dependent on the printer. Wurlitzer printer: 4800baud
Printer bits 	5311	• 7 • 8	Here you can select number of data bits of the printer, dependent on the printer. Wurlitzer printer: 8
Printer parity 	5312	• even • odd • none	Here you can select parity of the printer, dependent on the printer. Wurlitzer printer: none

Name	SCN	Possible settings	Description
Printer line feed 	5313	• on • off	Here you can define whether printout should have a line feed after every printed line. Wurlitzer printer: on
Printer stop bit 	5314	• 1 • 2	Selection depends on the printer. Wurlitzer printer: 2
Printer delay time 	5315	• 0ms • 500ms • 750ms • 1500ms	Here you can assign a delay time to the printer, depending on buffer storage of the printer. Wurlitzer printer: 750ms.
Empty compartment indication 	5316	• on • off	Here you can switch on or off empty compartment indication.
	5317	• 110 • 19200 • 9600 • 4800 • 2400 • 1200	Here you can adjust data rate of the empty compartment indication.
	5318	• 7 • 8	Here you can adjust number of data bits for the empty compartment indication.
	5319	• none • odd • even	Here you can adjust parity for the empty compartment indication.
	5320	• 115k • 9600 • 19200 • 38400	Here you can adjust data rate for the PC interface.
	5321	• 7 • 8	Here you can adjust number of data bits for the PC interface.
	5322	• even • odd • none	Here you can adjust parity for the PC interface.
Advertising text 	5323	Enter via keyboard. Advertising text 30 to 39, see page 57.	Here you can release advertisng text. How to create advertising text, see page 56.
Turnover/sales display 	5324	• Cash • Sells	Here you can switch the standard display from turnover/ cash (currency) to sales/sells (products) when opening the door of the vending machine.

5.3.4 Motor options

You can assign settings to the motors of the compartments.

- Define the motor state (released, free vend, locked), see below.
- Switch motors to parallel operation, see page 42.
- Define motor groups, see page 43.
- Define selection motor assignment, see page 44.

Define motor state

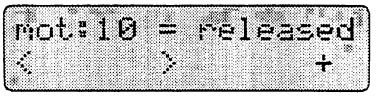
Each motor can be defined to three different states:

released	motor can be selected, vend with money insertion (factory preset)
free vend	motor can be selected, vend without money insertion (price of corresponding compartment has to be set to 0.00, see page 11).
locked	motor can not be selected, no vend possible, e.g. due to defective motor.

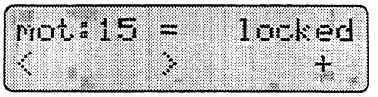
During the main motor test (see page 35) the set option (released, locked, free vend) can change depending on the state.This menu enables you to set specific motor options.

Call up technical menu and proceed as follows:

1. Enter **SCN 5201**.
   ⇨ Display shows:



2. Enter number of requested motor
   here e.g. motor 15.
   ⇨ Display shows:



3. Press button [3] '+' until requested motor option is reached
   ⇨ Top RH side of the display changes between:
   released, locked and free vend.

4. To quit the menu press button [R].

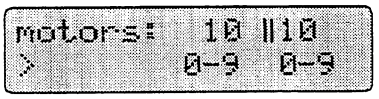
Switch motors to parallel operation (only snack machines)
This menu enables you to switch motors to parallel operation, e.g. for vending of longish products. Each spiral has its own motor.

NOTE: Pay attention to the fact that always one left motor (even number) and one right motor (odd number) have to be connected for parallel operation, even if these motors are not adjacent.

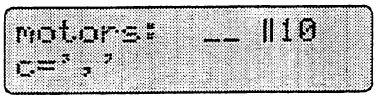
The following example shows programming of parallel operation to the motors 12 (LH motor) and 15 (RH motor):

Call up technical menu and proceed as follows:

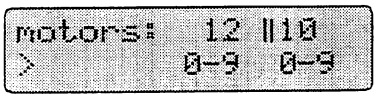
1. Enter **SCN 5211**.
   ⇨ Display shows:



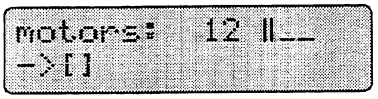
2. Press button [2] '0-9'
   ⇨ Display shows:



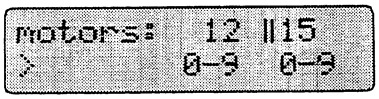
3. Enter number of the LH motor in 2 digits, here 12
   ⇨ Display shows:



4. Press button [3] '0-9'
   ⇨ Display shows:



5. Enter number of the RH motor in 2 digits. here 15
   ⇨ Display shows:



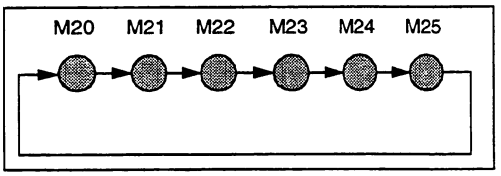
NOTE: In case the parallel operation is for enlargement of one compartment, you have to lock all the other motors between the left and the right one (here motors no. 13 and 14 – see page 41).

6. To quit the menu press button [R].

Define motor groups
This menu enables you to define motor groups. These motor groups are useful in case several compartments filled with the same products and if the products of these compartments are to be sold regularly.

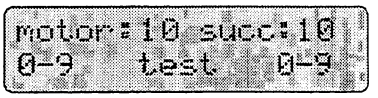
NOTE: When defined motor groups are used it is strongly recommended that a record of the settings are left inside the machine. In this way following service engineers will be aware.

Example: Motors no. 20 up to 25 should be defined to a motor group.

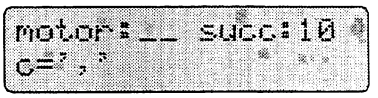


Call up technical menu and proceed as follows:

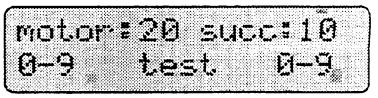
1. Enter **SCN 5221**.
   ⇨ Display shows:



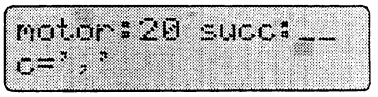
2. Press button [1] '0-9'.
   ⇨ Display shows:



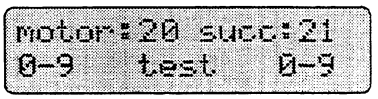
3. Enter number of the first motor
   – here motor 20.
   ⇨ Display shows:



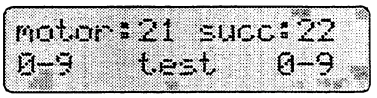
4. Press button [3] '0-9'.
   ⇨ Display shows:



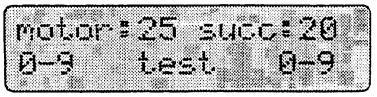
5. Enter number of successive motor
   – here motor 21.
   ⇨ Display shows:



6. Enter further successive motor numbers
   here 22, 23, 24, 25.



7. Assign the last motor (here no. 25) to the first motor of the group (here 20).
   ⇨ The group is formed.
   ⇨ Display shows:



8. Press button [2] 'Test' to check the group again.
   ⇨ Display shows the motors in sequence.
   Pay attention that the group is closed.

9. To quit the menu press button [R].

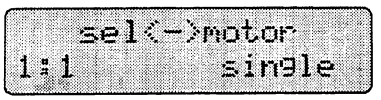
NOTE: When defined motor groups you **have to** assign all selections of this group to the first motor of the motor group (SCN 5231, see page 44).
The price of this group has to be programmed to the first selection of the group.

Selection motor assignment
This menu enables you to assign selections and motors. Standard configuration is 1:1, i.e. each selection is assigned to its corresponding motor. You can change this assignment as you like.

NOTE: When selection motor allocations are used it is strongly recommended that a record of the settings are left inside the machine. In this way following service engineers will be aware.

Call up technical menu and proceed as follows:

1. Enter **SCN 5231**.
   ⇨ Display shows:



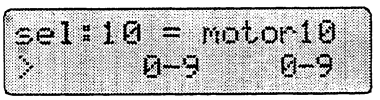
2. You can choose.
   - Press button [3] 'single' to assign selections to single motors.

     or

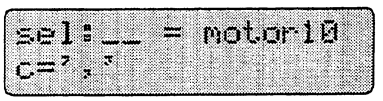
   - Press button [1] to produce '1:1' assignment. Thus all existing motor groups and selection-motor allocations are abolished. Quit the menu by pressing button [R].

Example: Selection 15 should be assigned to motor 20.

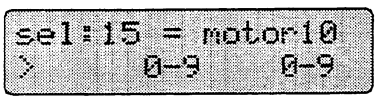
3. When you select button [3] 'single':
   ⇨ Display shows:



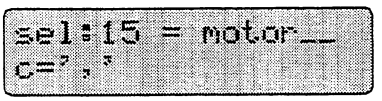
4. *Press button* [2] '0-9'.
   ⇨ Display shows:



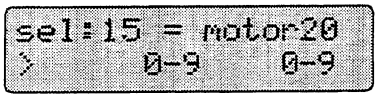
5. Enter number of requested selection - here 15.
   ⇨ Display shows:



6. Press button [3] '0-9'.
   ⇨ Display shows:



7. Enter number of the motor to be assigned – here motor 20.
   ⇨ Display shows:
   ⇨ Selection 15 is now connected to motor 20.



8. To quit the menu press button [R].

5.4 Setting up payment systems

Introduction – SCN 7000
This menu enables you to carry out settings for coin acceptance and change return.

The IVC2 control unit is able to manage 16 different coins and 16 different bank notes (coin channels and bank note channels). These channels can be configurated as per requirements.

Before you start programming of the payment system you have to find out which payment system is installed and features of the vending machine.

NOTE: You can display actual settings of the coin and bank note channels in the test menus 'coin acceptor test' (SCN 4102, see page 30) and 'bank note acceptor test' (SCN 4103, see page 31) or you can print out statistics about 'Currency configuration' (see page 27).

ECA (**E**lectronic **C**oin **A**cceptor)
For machines with electronic coin acceptor the coin system has to be programmed manually, see page 46.

MDB coin systems
Data of MDB systems (coin systems, bank note systems) have to be read out by data transfer (SCN 5109). Thus all data of the MDB system is transmitted to the IVC2 control unit.

5.4.1 Summary of functions in this menu section

- Set up machines with ECA (electronic coin acceptor), see page 46.
  (only cigarette machines)
- Set up machines with MDB system (coin system, bank note acceptor), see page 48.

5.4.2 Set up machines with ECA (electronic coin acceptor)

For machines with ECA the coin system has to be programmed manually.

Setting of coin options

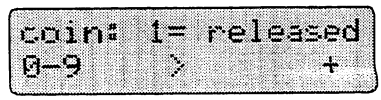
This menu enables you to set acceptance options for all 16 coin channels separately (see table).

released	coin will be accepted
Cha emp.	coin will be accepted even though change giver is empty
cashbox	coin goes directly into the cash box
locked	coin is locked

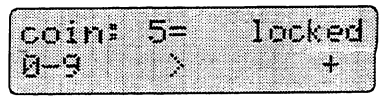
Before you start programming of coin option you have to find out which coins runs on which channel (coin acceptor test, see page 30) or you can print out actual statistics of 'Currency configuration' (see page 27)

Call up technical menu and proceed as follows:

1. Enter **SCN 7012**.
   ⇨ Display shows:



2. Select requested coin channel via keyboard
   - here e.g. coin channel 5.
   ⇨ Display shows actual setting.



3. Press button [3] '+' until requested coin option is reached.
   ⇨ Top RH display changes between:
   released, Cha empt., cashbox and locked.

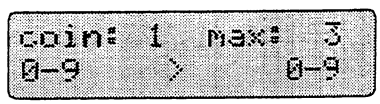
4. To quit the menu press button [R].

Limitation of coin acceptance

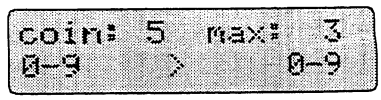
This menu enables you to limit number of coin per coin channel to be accepted for **one** vend for each coin channel separately. To programme coin option you first have to find out which coins runs on which channel (coin acceptor test, see page 30) or you can print out actual statistics of 'Currency configuration' (see page 27).

Call up technical menu and proceed as follows:

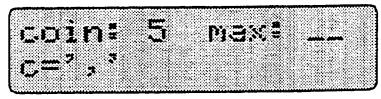
1. Enter **SCN 7013**.
   ⇨ Display shows:



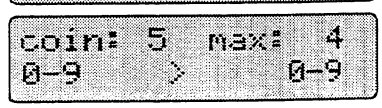
2. Press button [1] '0-9' and select request coin channel via keyboard - here e.g. coin channel 5.
   ⇨ Display shows actual setting.



3. Press button [3] '0-9'.
   ⇨ Display shows:



4. Enter maximum number of units of currency to be accepted for one vend - here e.g. 4.
   ⇨ Display shows:



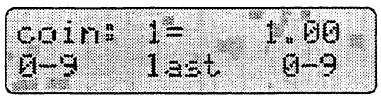
5. To quit the menu press button [R].

Setting of coin values
This menu enables you to set coin values for each of the 16 coin channels separately.

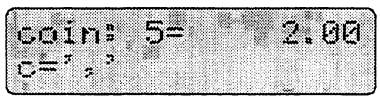
Before you start programming of coin values you have to find out which coins runs on which channel (coin acceptor test, see page 30) or you can print out actual statistics of 'Currency configuration' (see page 27).

Call up technical menu and proceed as follows:

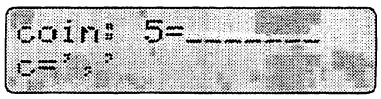
1. Enter **SCN 7014**.
   ⇨ Display shows:



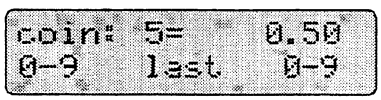
2. Press button [1] '0-9' and enter number of requested coin channel via keyboard
   - here e.g. coin channel 5.
   ⇨ Display shows actual setting:



3. Press button [3] '0-9'.
   ⇨ Display shows:

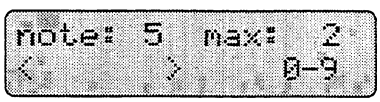


4. Enter requested coin value via keyboard.
   Button [C] places the decimal point.
   Example: 0.5 unit of currency = [0][C][5][0].
   ⇨ Display shows:



5. To quit the menu press button [R].

6. Enter maximum number of same bank notes to be accepted for one vend - here e.g. 2.
   ⇨ Display shows:



7. To quit the menu press button [R].

5.4.3 Set up machine with MDB system (coin system, bank note acceptor)

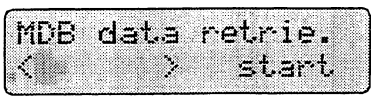
For machines with MDB systems the IVC2 control unit will be initialized by read out of data during data retrieval from the MDB system.

Automatic configuration of the MDB system

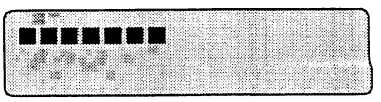
This menu enables you to initialize the IVC2 control unit by data retrieval from the MDB system. This procedure is absolutely necessary when you connect a MDB system for the first time or after exchange.

Call up the technical menu and proceed as follows:

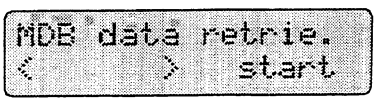
1. Enter **SCN 5109**.
   ⇨ Display shows:



2. Press button [3] 'start'.
   ⇨ *Display shows progress.*
   ⇨ Automatic configuration is carried out.



   ⇨ Then display shows again:



3. To quit the menu press button [R].

NOTE: With every data bloc transfer carried out you reset all settings for coin and bank note channels manually done before. You have to re-programme these settings again.

Setting of coin options

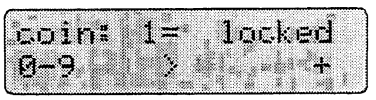
For MDB systems coin options are set automatically by data retrieval from the coin system. This menu enables you to set individual coin options for all of the 16 coin channels manually.

released	coin will be accepted
Cha emp.	coin will be accepted (even though change tubes are empty)
cashbox	coin goes directly into the cash box
locked	coin is locked

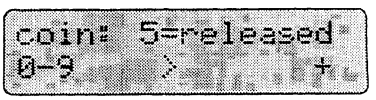
Before you start programming of coin options you have to find out which coins runs on which channel (coin acceptor test, see page 30) or you can print out actual statistics of 'Currency configuration' (see page 27).

Call up technical menu and proceed as follows:

1. Enter **SCN 7012**.
   ⇨ Display shows:



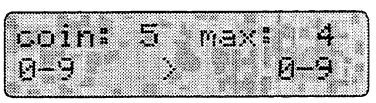
2. Enter number of requested coin channel via keyboard - here e.g. coin channel 5.
   ⇨ Display shows actual setting.



3. Press button [3] '+' until requested coin option is reached.
   ⇨ Top Rh display changes between:
   released, Cha emp., cashbox and locked.

4. To quit the menu press button [R].

5. Enter number of units of currency to be accepted for one vend - here e.g. 4.
   ⇨ Display shows:



6. To quit the menu press button [R].

Setting of bank note options (for MDB only)

This menu enables you to set individual options for bank note acceptance for all of the 16 bank note channels (see table).

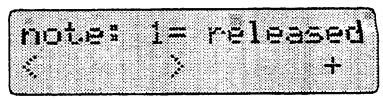
released	bank note will be accepted and kept in the bank note acceptor
nochange	bank note will be accepted (even though change tubes are empty)
cashbox	bank note will be accepted and goes directly into the cash box (no acceptance with empty change tubes)
locked	bank note will not be accepted (single bank notes can only be locked with MDB systems)

IMPORTANT NOTE! For MDB bank note acceptors you first have to carry out data bloc transfer (*see* page 37). Then you can lock bank notes manually.

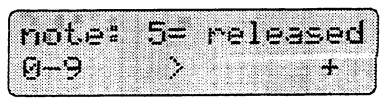
Before you start programming of bank note option you have to find out which bank note runs on which channel (bank note acceptor test, see page 31) or you can print out actual statistics of 'Currency configuration' (see page 27).

Call up technical menu and proceed as follows:

1. *Enter* **SCN 7016**.
   ⇨ Display shows:



2. Enter number of requested bank note channel via keyboard - here e.g. bank note channel 5.
   ⇨ Display shows actual setting:



3. Press button [3] '+' until reuqested bank note option is reached.
   ⇨ Top RH display changes between:
   released, locked, cashbox and nochange.

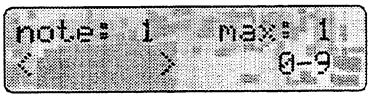
4. To quit the menu press button [R].

Limitation of bank note acceptance
This menu enables you to limit number of bank notes per bank note channel to be accepted for **one** vend for each bank note channel separately.

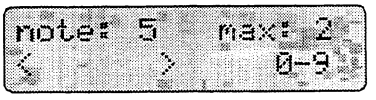
To programme bank note options you first have to find out which bank note runs on which channel (bank note acceptor test, see page 31) or you can print out actual statistics of 'Currency configuration' (see page 27).

Call up technical menu and proceed as follows:

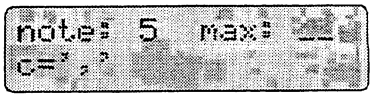
1. Enter **SCN 7017**.
   ⇨ Display shows:



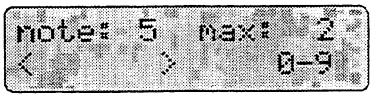
2. Enter number of requested bank note channel via keyboard - here e.g. bank note channel 5.
   ⇨ Display shows actual setting.



3. Press button [3] '0-9'.
   ⇨ Display shows:



4. Enter number of bank notes to be accepted for one vend via keyboard - here e.g. 2.
   ⇨ Display shows:



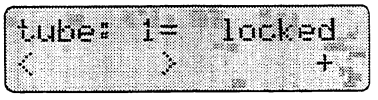
5. To quit the menu press button [R].

Setting of return options
This menu enables you to release or lock individual change tubes of the coin system.

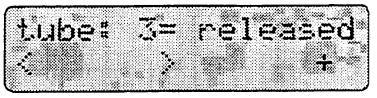
released	change tube is released
locked	change tube is locked

Call up technical menu and proceed as follows:

1. Enter **SCN 7051**.
   ⇨ Display shows:



2. Select requested change tube via keyboard - here e.g. change tube no. 3.
   ⇨ Display shows actual setting.



3. Press button [3] '+' until requested option is reached.
   ⇨ Top RH display changes between: released and locked.

4. To quit the menu press button [R].

Filling change tubes (only for MDB)

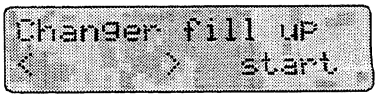
In this menu you can fill the change tubes. Filled coins are stored in the statistical data.

There are two methods possible:

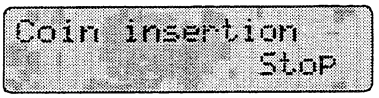
1. Insert coins with open machine door.
2. Press button SERVICE.
3. Press button 3 for 'End' to delete inserted sum of money.

or

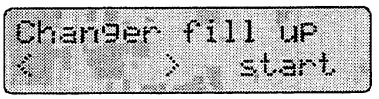
1. Enter **SCN 4301**.
   ⇨ Display shows:



2. Press button [3] 'start'.
   ⇨ Display shows:



3. Insert required coins until the tubes are filled sufficiently.
4. When all coins are inserted press button [3] 'Stop'.
   ⇨ Display shows again:



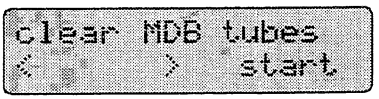
5. To quit the menu press button [R].

Emptying change tubes (only for MDB)

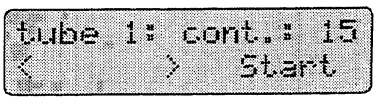
In this menu you can pay out from the change tubes. Paid out coins are stored in the statistical data.

Call up technical menu and proceed as follows:

1. Enter **SCN 4302**.
   ⇨ Display shows:



2. Press button [3] 'Start'.
   ⇨ Display shows:
   ⇨ Top RH display shows number of coins in selected change tube
   - here: change tube 1 contains 15 coins.



3. By pressing button [3] 'Start' one coin will be dispensed off selected tube.
   If you keep button [3] 'Start' pressed, several coins will be dispensed off selected tube (auto repeat function).
4. To quit the menu press button [R].

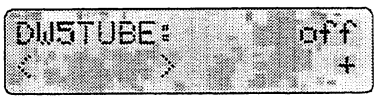
5.5 Setting up coin return systems

5.5.1 Activation of the 5-tube-changer or hopper

For machines with 5-tube-changer or hopper(s) these systems have to be activated under SCN 5113.

Call up technical menu and proceed as follows:

1. Enter **SCN 5113**.
   ⇨ Display shows:



2. Press button [3] „+“ until you reach requested setting.

There are 3 settings possible:

- **off**
  - The 5-tube-changer or hopper(s) are switched off.
- **on**
  - The 5-tube-changer or hopper(s) are switched on. The 5-tube-changer operates without empty counter and always has to be filled sufficiently to return change (the 5-tube-changer has no empty sensor).
  - Hopper(s) operate without empty counter. If all hoppers are empty, the IVC2 control unit will receive a signal and switch over to 'Exact amount'.
- **on/cnt**
  - Both systems operating with empty counters.

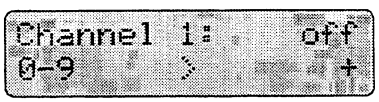
3. To quit the menu press button [R].

NOTE: Empty counters have to be programmed, if the machine should switch to 'exact amount' in case the tubes or hoppers are empty.

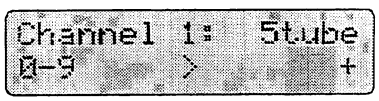
5.5.2 How to release the hopper(s) or tubes of the 5-tube-changer

To release the hopper(s) or tubes of the 5-tube-changer proceed as follows:

1. Enter **SCN 7061**.
   ⇨ Display shows:



2. Press button [3] „+“ until you reach requested setting.
   There are 3 setting available:
   off, 5tube and hopper.



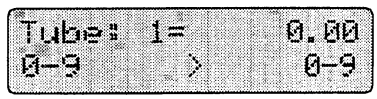
3. To quit the menu press button [R].

5.5.3 Setting of coin denomination for the hopper(s) and 5-tube-changer

In this point of menu the coin channels named 'tube'.

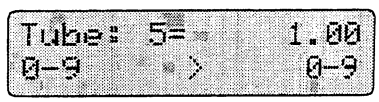
For setting of coin denomination proceed as follows:

1. Enter **SCN 7062.**
   ⇨ Display shows:



2. Select requested tube by means of button [2] „>"
   here e.g. tube 5.
   ⇨ Display shows:

3. Press button [3] „0-9" and enter coin denomination of this tube (hopper) by means of the keyboard.
   ⇨ Display shows, e.g.:
   ⇨ Proceed as described for further tubes (hoppers).



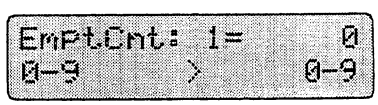
4. To quit the menu press button [R].

5.5.4 *Setting of empty counters*

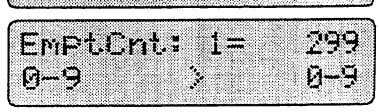
In case the empty counters are activated under SCN 5113, you have to programme the number of coins in the single tubes/hoppers.

To programme number of coins proceed as follows:

1. Enter **SCN 7064.**
   ⇨ Display shows:



2. Press button [3] „0-9" and enter number of coins by means of the keyboard, e.g. tube 1 contains 299 coins.
   ⇨ Display shows:
   ⇨ Proceed as described for further tubes (hoppers).



3. To quit the menu press button [R].

NOTE: For filling the tubes of the 5-tube-changer or filling hoppers you always have to start with tube A (hopper A) / lowest coin denomination to tube E (hopper C) / highest coin denomination.

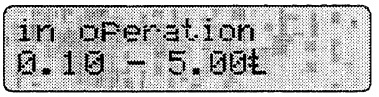
Overview about maximum number of coins

EURO	5-tube-changer (500mm)	hopper
0,01	299	860
0,02	299	650
0,05	299	500
0,10	259	500
0,20	233	360
0,50	210	275
1,00	214	300
2,00	227	270

ATTENTION! After filling of the hopper(s) / 5-tube-changer **it is absolutely necessary** to press once button 'Füllstand setzen' on the interface of the coin *return system.*

5.6 Functional description of the LCD display

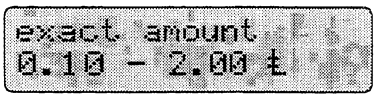
When installed the machine the display normally shows



Starting point of this display is the text of message no. 29 from the list of vend and advertising messages (see page 57).

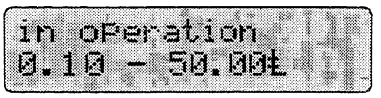
Message in the bottom line is the result of coin option settings under SCN 7012, see page 46 and page 49. The lowest and the highest coin denominations, of which the coin channels are 'released', are displayed.
Coin denominations between lowest and highest are not displayed. If one of these coins will be 'locked', the display does not change.

For machines equipped with a change system, the display shows the same as mentioned above.
But, in case money stock in the change system comes below set maximum return (SCN 5116), the display changes to



The bottom line shows the coin denominations which will still be accepted from the change and the coin system.

If machines are equipped with bank note acceptor (MDB), the highest bank note denominations will be displayed.



Display of the highest denomination bank note results after setting of bank note option under SCN 7021.

5.7 Using and editing display messages

Introduction – SCN 8000
50 different vend messages are stored in the IVC2 control unit (see table on page 57) which are displayed in case of certain states of the vending machine to inform the customer. These message are programmed in German, Endlish and French.

All vend messages can be edited as per requirements.

10 of the 50 messages are used as advertising messages. These can be released or locked. When released, the advertising messages vary with vend messages in the display. Advertising messages can be edited freely and you can also edit pre-defined place holders e.g. for date, time etc..

This menu enables you to create or change messages in the display. You can also add defined place holders like e.g. date, time etc. to the messages.

NOTE: If you change or delete messages by mistake, switch off the machine and press button 'OPTION 2' while switch on the machine again. Thus the IVC2 control unit is reset, language is switched to 'English'. Change language if necessary (SCN 5100, see page 37).

5.7.1 Summary about functions of this menu section

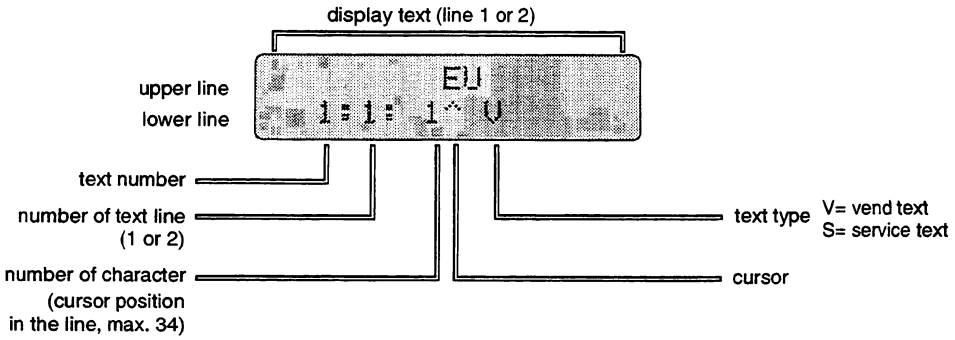
- List of vend and advertising messages, see page 57.
- Working with the text editor, see page 58.

5.7.2 List of vend and advertising messages

No.	Text of the message	No.	Text of the message
1	EU £	2	exact amount 0.50 - 2.00 £
3	in operation sales: 0.00£	4	supply voltage low !
5	out of order !	6	out of order ! error 77
7	cheating by tilt over!	8	cheating through string !
9	Credit: 0.00£ enter selection	10	your select.: 0
11	credit: 0.00£ sel: 0= 0.00£	12	insuff. credit ! sel 0= 0.00£
13	Product sold out !	14	Credit 0.00£ invalid select.!
15	Loss ret.money? Yes= same select	16	credit 0.00£ vend of 0
17	thank you !	18	test vend selection:
19	credit: 0.00£ max: 0.00	20	credit too high! sel 0= 0.00£
21	receipt in Progress...	22	maximum change 5.00£
23	take your change	24	error 77 sales: 0.00£
25	look for our special offers !	26	take your change
27	no credit ! sel: 0= 0.00£	28	test vend selection: 0
29	in operation 0.00 - 0.00£	30	advert no. 1
31	advert no. 2	32	advert no. 3
33	advert no. 4	34	advert no. 5
35	advert no. 6	36	advert no. 7
37	advert no. 8	38	advert no. 9
39	advert no. 10	40	card: 0.00£ enter selection
41	money: 0.00£ card: 0.00£	42	exact amount sales: 0.00£
43	11:37:44 06-18-2002	44	motor test start
45	motor test: 0 stop	46	free vend selection: 0
47	exact amount Pieces: 0	48	in operation Pieces: 0
49	malfunction error 77	50	activate device

5.7.3 Working with the text editor

Explanations



Upper line of the text editor:
The upper line shows the message in the display, specified by text number and number of text line.

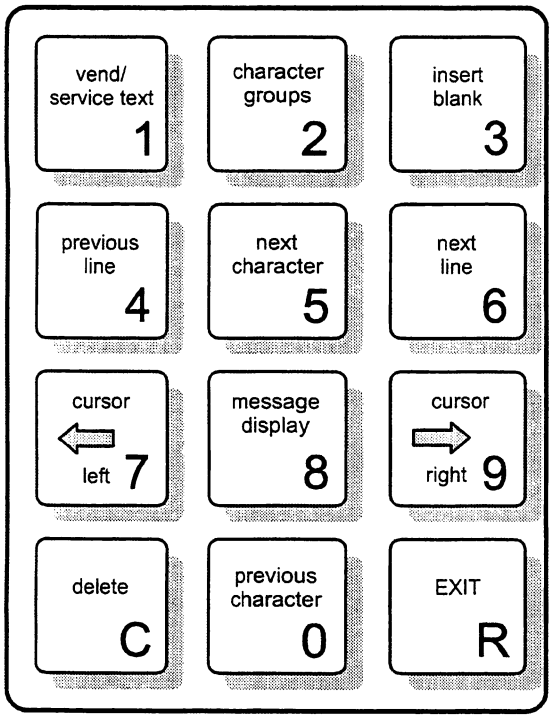
Lower line in the text editor:

- The text number shows actual display text, see page 57.
- You can create display messages in two lines. Number of text line shows actual line displayed.
- The maximum number of charatcters per line is 34. The number of character shows you present position of the cursor.
- The cursor shows you the actual position in the text. You can change the character above the cursor (by pressing button [2] you can select group of characters, with button [5] or [0] you can select requested character).
- RH beside the cursor type of text is indicated (V = vend text; S = service text).

Groups of characters in the text editor
To create a text different characters are available which a assembled in groups. These groups contain special characters, numbers, capital and small letters as well as place holders..

character groups	characters available
By pressing button [2] you can select group of characters, with button [5] or [0] you can select requested character.	
special characters	" # $ & ' ( ) * + , - . /
numbers	0-9 : ; < = > ?
capital letters	A-Z [¥] ^ _ `
small letters	a-z { | } →←
place holders	□□ (place holders in the display)

Button allocation in the text editor



button	function
1	Switches between vend and service texts.
2	Quick step to the character groups, see also table on page 58 (special characters, numbers, capital letters, small letters, place holders).
3	Inserts blank character before cursor position.
4	Switches back to previous line, see list of vend messages on page 57.
5	Changes character above the cursor (next character).
6	Switches to the next line, see list of vend messages on page 57.
7	Cursor backwards (max. 34 digits are available).
8	Shows edited text (message in the display).
9	Cursor forwards (max. 34 digits are available).
0	Changes character above the cursor (previous character).
C	Deletes character above the cursor.
R	Completes editing.

Loading language into the text editor

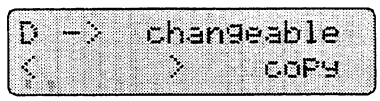
In this menu section you can load vend messages available (German, English, French) into the text editor for processing.

Here you can edit the text and store it as new text in the menu 'language: edit' (SCN 5100). The other languages German, English and French remain in original form in the IVC2 control unit and can be called up again under SCN 5100.

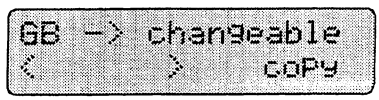
To edit vend messages you have to load requested language into the the text editor and into the section 'changeable' (RAM memory). Only then you can work on the text.

Call up technical menu and proceed as follows:

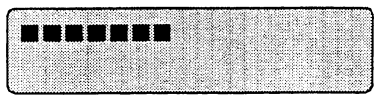
1. Enter **SCN 8001**.
   ⇨ *Display* shows:



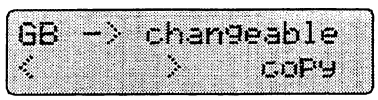
2. Select requested language by pressing button [1] '<' or [2] '>' – here e.g. 'GB' for English.
   ⇨ Display shows:



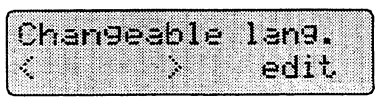
3. Press button [3] 'copy'.
   ⇨ Display shows the process.
   ⇨ Selected language has been copied into the section 'changeable'.



   ⇨ Then display shows:



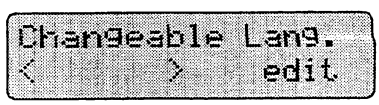
4. Press button [2] '>' until display shows:
   ⇨ Now you can call up messages for editing.



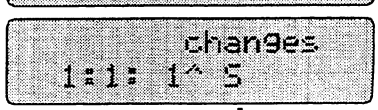
Call up service and vend messages for edit

ATTENTION! Service messages used by the IVC2 control unit!
Never change service messages!

1. Enter **SCN 8000**.
   ⇨ Display shows:



2. Press button [3] 'edit'.
   ⇨ Display shows:
   ⇨ By pressing button [1] you can switch between service (S) and vend (V) messages.
   ⇨ **Attention:**
   Never change service messages!
   ⇨ Text editor is reached, button allocation changes now see page 59.



S = service text

– oder –

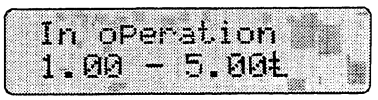
V = vend text

Editing vend messages

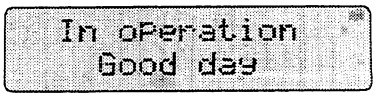
Editing of vend messages is decribed on the following pages. As an example vend text no. 29 (see list of vend and service messages on page 57) should be changed.

Example

Original text: vend text no. 29 . . .

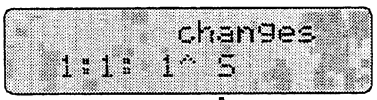


. . . should be changed to:



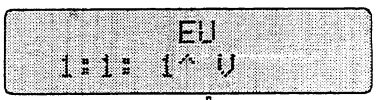
Procedure

1. Call up text editor (see page 60) and switch to vend texts
   - ⇨ By pressing button [1] you can switch between vend (V) and service (S) messages.
   - ⇨ **Attention:** Never change service messages!
   - ⇨ When you reached the text editor button allocation changed, see page 59.



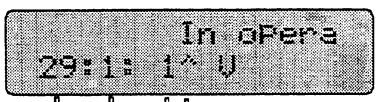
S = service text

– or –



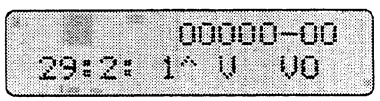
V = vend text

2. Press button [6] (next line) until you reach second line of message no. 29, see page 57.
   - ⇨ **Example:** text number 29.
   - ⇨ **Note:** When you press button [8] the complete message will be displayed.

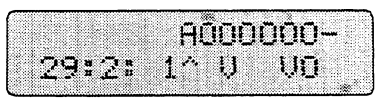


cursor
text no.:29
1. character
line 1

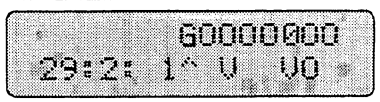
3. Press button [6] (next line) to call up second line of message no. 29.
   - ⇨ Display shows:
   - ⇨ The cursor '^' shows first character of line no. 2.



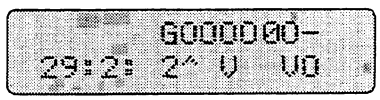
4. Press button [2] (character groups), until the group of 'capital letters' (A) is displayed.



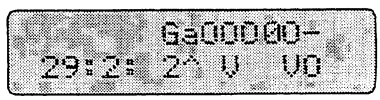
5. Press button [5] (next letter), until the letter 'G' is shown above the cursor '^'.
   - ⇨ Display shows:
   - ⇨ **Note:**
     Button [5] = next letter
     Button [0] = previous letter



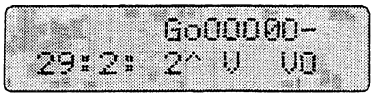
6. Press button [9] (cursor to the right).
   - ⇨ Text line jumps one step to the right, thus the cursor '^' is below second digit of the line.
   - ⇨ Display shows:



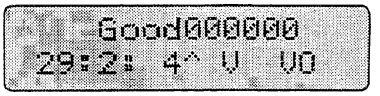
7. Proceed as described under point 4 and select the group 'small letters' (a) by pressing button [2] (character groups).
   - ⇨ Display shows:



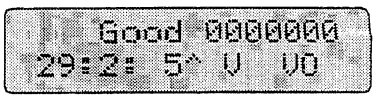
8. Proceed as described under point 5 and press button [5] (next letter) until the next letter 'o' is displayed.
   ⇨ Display shows:



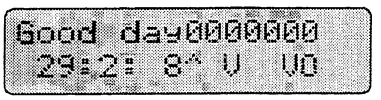
9. Proceed as described under point 4 and 5 until the word 'Good' is completed.
   ⇨ Display shows:



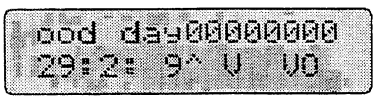
10. Insert one blank after the letter 'd' by pressing button [3] *(insert blank)*.
    ⇨ Display shows:



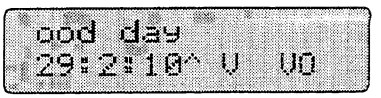
11. Press button [9] (cursor to the right) and proceed with the word 'day' as described above.
    ⇨ Display shows:



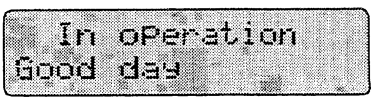
12. Press button [9] (cursor to the right) to place the cursor RH beside the letter 'y'.
    ⇨ *Display shows:*



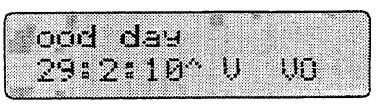
13. Press button [C] (delete) to delete the character above the cursor and proceed until all characters not used are deleted.
    ⇨ Display shows:



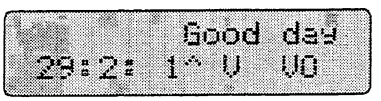
14. Press button [8] (message display)
    ⇨ The changed message is displayed:
    ⇨ ***Note:*** By pressing button [8] repeated display changes bewteen text editor and message display.



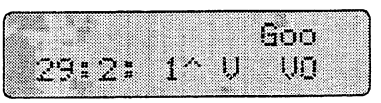
15. To place the text 'Good day' in the middle of the line you have to insert blanks before the text.
    Find out number of blanks (here 4 blanks) and press button [8] (message display) to call up again the text edtitor.
    ⇨ Display shows again:



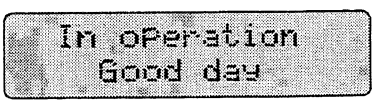
16. Press button [7] (cursor to the left) until the cursor is positioned below the letter 'G'.
    ⇨ Display shows:



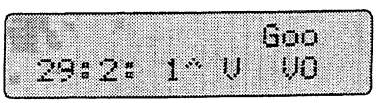
17. Press button [3] (insert blank) as often as the text is positioned in the middle of the line (here 4 times).
    ⇨ Display shows:



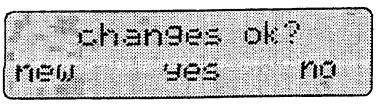
18. Press button [8] (message display) to display the change message.
    ⇨ Display shows:



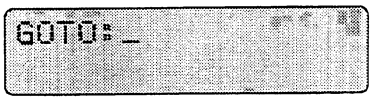
19. if the changed text is correct, press button [8] (message display).
    ⇨ Display shows:



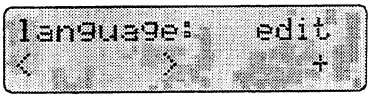
20. Now the changed text has to be stored, therefore press button [R] (EXIT) twice.
    ⇨ Display shows:



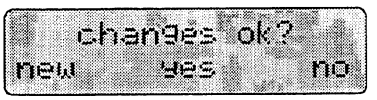
21. Press button [0].
    ⇨ Display shows:



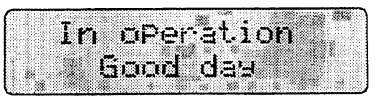
22. Call up **SCN 5100**.
    ⇨ Display shows:
    ⇨ **Note:** In case the display shows 'D', 'GB' or 'F' press button [3] '+'until display shows 'edit'.



23. Press button [R] twice.
    ⇨ Display shows:



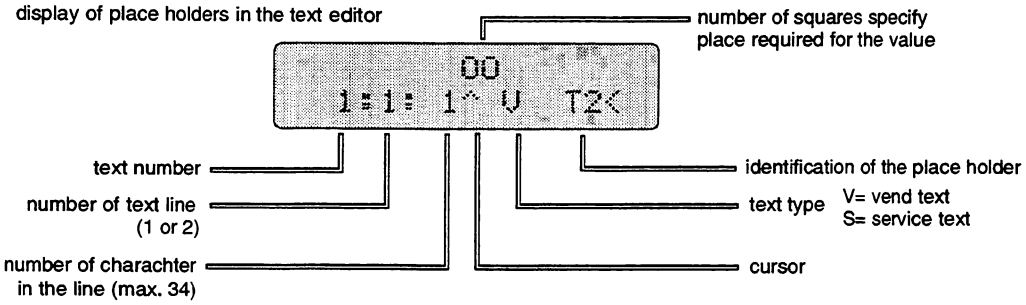
24. Press button [2] 'yes'.
    ⇨ The changed text is stored in the IVC2 control unit.
    ⇨ When closed the door the display shows the changed text automatically.



NOTE: If you have changed and stored vend messages (text 1 to 29 and 40 to 50 in the list of vend messages), these texts will be displayed with corresponding machine state.

Place holders for vend messages

Place holders (defined components like e.g. date, time etc.) are displayed as squares. They are standing for values stored in the IVC2 control unit. These place holders can be positioned in the vend messages like other characters.



List of place holders

display	meaning
T2	display of day
J2	display of year (2 digits)
UH	display of hours
US	display of seconds
W2	display of selection
R7	display of return amount
D7	display of total credit for print out
K7	display of cash box credit
R6	display of maximum return amount
C2	display of currency strings
C4	display of currency strings
GK	display of credit by coin insertion
K5	display of cash box credit
NL	line feed during printout
P6	display of selection price
V0	display of the lowest coin denomination
MT	display of motor number during motor test
AB	display of total vend counter

display	meaning
M2	display of month
J4	display of year (4 digits)
UM	display of minutes
E2	display of error
P7	display of price for selection
G7	display of total credit
Z7	display of escrow credits
H7	display of maximum credit
G6	display of total credit
C3	display of currency strings
CK	display of credit by electronic purse
K6	display of cash box credit
R5	display of maximum return
PR	printout of per cent character
P5	display of selection price
V1	display of highest coin denomination
UR	display of resetable vend counter

6 Flexible selection - motor - price group assignment

This chapter contains some examples how you can programme your vending machine. The IVC2 control unit is able to perform multiple variants of programming, some are described here.

NOTE: Before you start programming we recommend to fill out a plan about selection-motor-price group assignment as well as a filling plan. Thus you can understand at any time which selection is assigned to which motor respectively price group.

ATTENTION! Operating trouble possible!
Changes of selection, motor and price group assignments could cause malfunctions of the vending machine. Therefore each change of configuration has to be performed very prudently.

6.1 Programming of price groups

Introduction
This menu enables you to create/change price groups and to assign these groups to motors available. Products with the same price can be grouped. In case price of these products changes, you can change the price for the complete group in one programming step.

Information about selection-motor-price group settings
Standard configuration of the vending machine is 1:1:1, i.e.
selection 10 ⇨ motor 10 ⇨ price group 10, selection 11 ⇨ motor 11 ⇨ price group 11, etc..
The IVC2 control unit offers unrestricted possiblilities of changing assignments. While reprogramming of assignments faults might easily appear which entail discrepancy in price programming.

It is **important** that changes of prices only to be carried out under number of price group.

Example: selection 10 ⇨ motor 14 ⇨ price group 20
Price of selection no. 10 to be changed in price group no. 20.

- In case problems occur during programming it is recommended to reset the IVC2 control unit to basic 1:1 assignment. After that price and motor groups have to be rebuilt.
- In case several motors are assigned to one price group it is recommended to leave a plan inside the vending machine. Thus you could prevent errors in case of reprogramming.
- If you change settings in the technical menu by mistake you can restore previous state of the IVC2 control unit by leaving the technical menu without data storage, therefore:
  Press button [R] and answer the dialog 'changes ok?' with button [3] for 'no'..

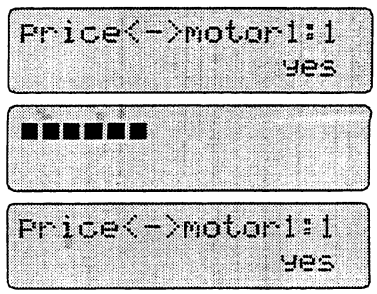
Summary of functions in this menu section

6.2 Selection of 1:1 assignment (basic configuration)

With selection of 1:1 assignment you reset the complete machine to basic configuration, i.e. each compartment has its individual vend price (motor 10 assigned to price group 10, motor 11 assigned to price group 11, etc.). Follow this procedure if you want to change several vend prices or complete motor-price group assignment.

Call up technical menu and proceed as follows::

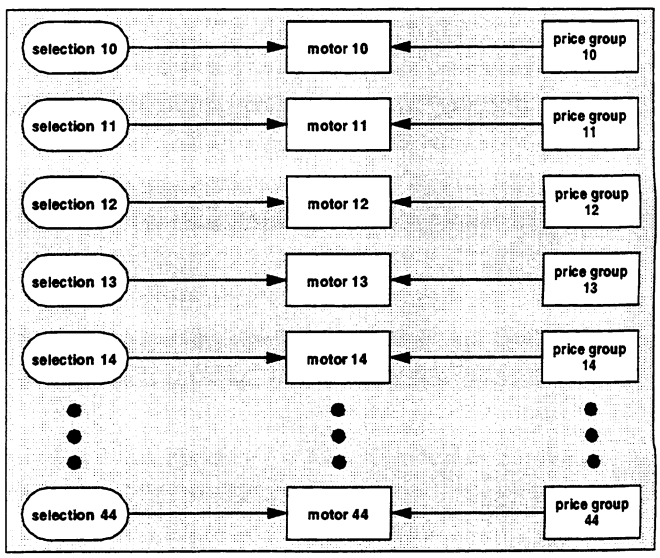
1. Enter **SCN 1200**.
   ⇨ Display shows:



2. Press button [3] 'yes'.
   ⇨ A scroll bar shows process.
3. Then display shows again:
4. To quit the menu press button [R].

Each selection is linked to corresponding motor.

Each motor is linked to corresponding price group.



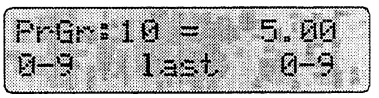
When 1:1 assignment is completed, you have to check and, if necessary, to reprogramme the vend prices, see page 67.

6.3 Creating/displaying/changing of price groups (vend prices)

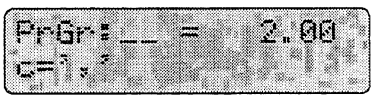
This menu enables you to create/display/change single price groups and corresponding prices.

Call up the technical menu and proceed as follows:

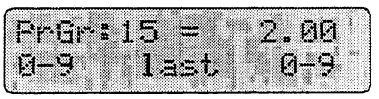
1. Enter **SCN 1100**.
   ⇨ Display shows:



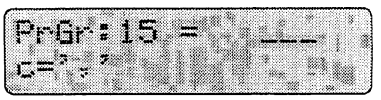
2. Press button [1].
   ⇨ Display shows:



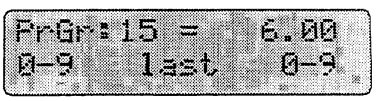
3. Enter number of requested price group (PrGr)
   - here e.g. price group 15.
   ⇨ Display shows:



4. Press button [3] '0-9'.
   ⇨ Display shows:



5. Enter required vend price via keyboard, button [C] places the decimal point .
   Example: 6.00 units of currency = [6] [C] [0] [0].
   ⇨ Display shows:



6. Select further pricegroups, if necessary, to have a look at and/or change prices.

7. To quit the menu press button [R].

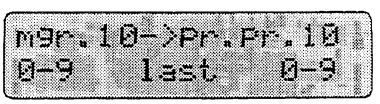
6.4 Connecting price groups and motors

When finished the defining of price and, if applicable, motor groups (see page 43), you can assign price groups to one or more motors or motor groups. Always allocate the price group to the first motor of a motor group.

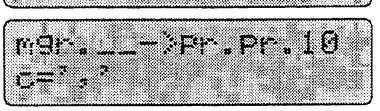
Call up technical menu and proceed as follows:

Example: price group 15 should be assigned to motors 20 and 21.

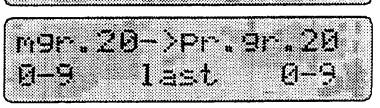
1. Enter **SCN 1310**.
   ⇨ Display shows:



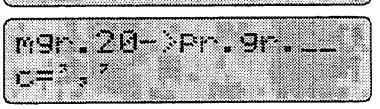
2. Press button [1].
   ⇨ Display shows:



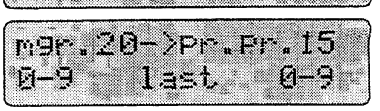
3. Enter number of requested motor - here motor 20
   ⇨ Display shows:



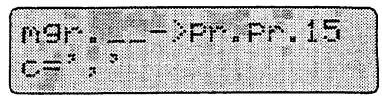
4. Press button [3] '0-9'.
   ⇨ Display shows:



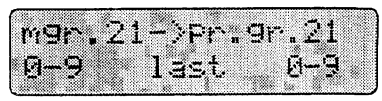
5. Enter number of requested price group
   - here price group 15.
   ⇨ Display shows:



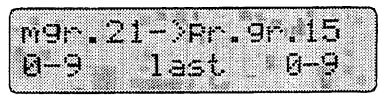
6. Press button [1].
   ⇨ Display shows:



7. Select further motors (if applicable)
   - here motor 21.
   ⇨ Display shows:



8. Also assign this motor to price group 15. Therefore enter number of price group via keyboard or, press button [2] 'last' to select last entered price group.
   ⇨ Display shows:
   ⇨ Motor 20 and 21 are assigned now to price group 15.



9. If necessary, follow up point 5 and 6 until all requested motors/motor groups are allocated.

10. To quit the menu press button [R].

6.5 Connecting price groups and motor groups

Motor groups can be defined, if several compartments are filled with the same product. Motor groups allow a sequential vending from compartments concerned.
If a motor group is selected several times, one motor after the other - independent of number of selection - will carry out vending. Thus the compartments are always filled equally.

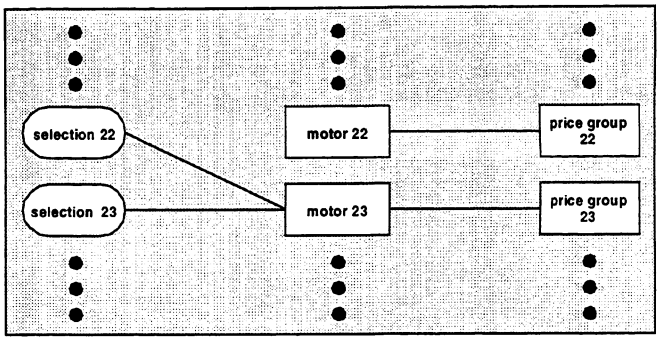
Advantage of motor groups is that while filling the machine you'll get a quick overview.

Creating motor groups
For motor groups single motors of compartments joined together. These groups can be assigned to price groups.

Connecting price groups and motor groups
For this setting selected price group will be assigned to the first motor of selected motor group.

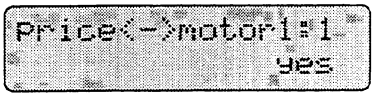
6.6 Several selection are assigned to one motor

Example:
Selections no. 22 and 23 should be linked to motor 23.



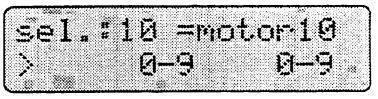
To programme this setting proceed as follows:

1. Enter **SCN 1200**.
   ⇨ Display shows:

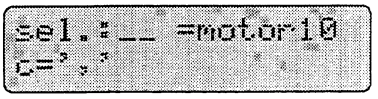


2. Programme 1:1 assignment, see page 66.

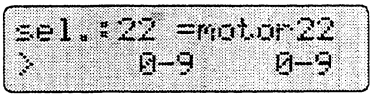
3. Enter **SCN 5232**.
   ⇨ Display shows:



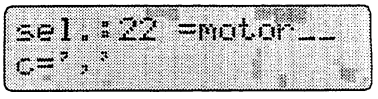
4. Press button [2] '0-9'.
   ⇨ Display shows:



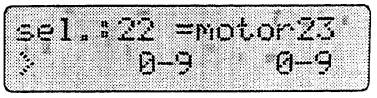
5. Enter number of selection 22 via keyboard.
   ⇨ Display shows:



6. Press button [3] '0-9'.
   ⇨ Display shows:



7. Enter number of motor 23 via keyboard.
   ⇨ Display shows:



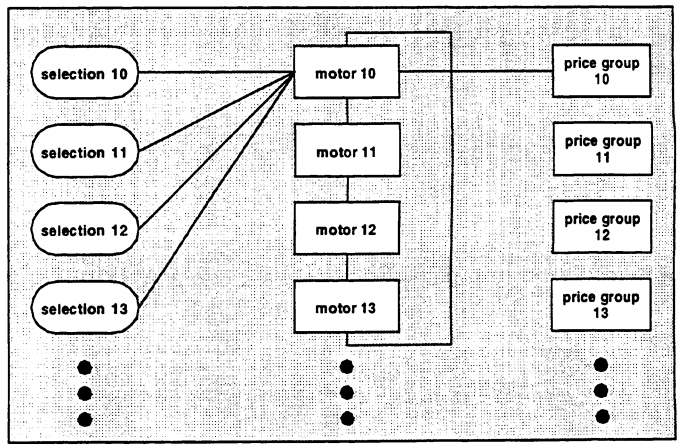
8. To quit the menu press button [R].

6.7 Several selections trigger several motors sequentially

Example
Selections 10 to 13 triggering motors 10 to 13 sequentially. Motors 10 to 13 are grouped.

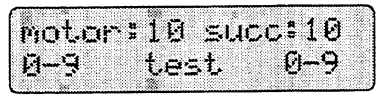
This motor group is assigned to price group 10.

The motors always triggered one after another, independent of selection. Thus guarantees that compartments are sold regularly.



Call up technical menu and proceed as follows:

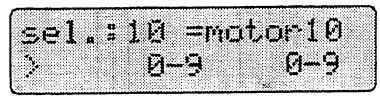
1. Enter **SCN 5221**.
   ⇨ Display shows:



2. Define motor group as described on page 43.
   ⇨ motor:10 succ:11 – motor:11 succ:12
   motor:12 succ:13 – motor:13 succ:10

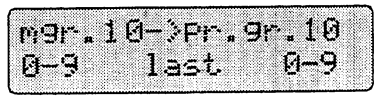
   ⇨ **Attention:** Other motors of this motor group must not have any assignment.

3. Enter **SCN 5232**.
   ⇨ Display shows:



4. Programme selection - motor group assignment as described on page 44.
   ⇨ sel.:10 =motor10 – sel.:11 =motor10
   sel.:12 =motor10 – sel.:13 =motor10

5. Enter **SCN 1310**.
   ⇨ Display shows:



6. Programme motor group - price group assignment as described see page 68.
   ⇨ mgr.10->pr.gr.10

7. To quit the menu press button [R].

7 Reprogramming of the IVC2 control unit

The procedure described in this chapter is necessary in the case of exchange of the IVC2 control unit for an unprogrammed IVC2 control unit from Wurlitzer or an IVC2 control unit from another machine.

Also, in case the IVC2 control unit works incorrectly and programming errors could not be located, a reprogramming is recommended.

Reprogramming of the IVc2 control unit has to be performed in two steps:

1. Carry out automatic basic configuration

2. Specify basic configuration (see page 73)

7.1 Automatic basic configuration

SCN 5555 for cigarette vending machines
SCN 5556 for snack vending machines

This menu enables you to configure the machine to fixed settings. While carrying out this menu all settings are restored to basic configuration, all selections assigned to motors in 1:1 condition.

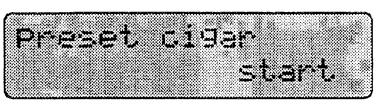
The automatic basic configuration menu is starting point for reprogramming. it does not perform all configuration settings - depending on type of machine and features some further programming has to be carried out, see page 73.

After programming of the automatic basic configuration, the language of the display is English. Please see following page how to change to desired langauge.

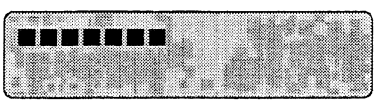
NOTE: It is absolutely necessary to check configuration settings and prices after performance of the automatic basic configuration (see page 11).

Call up technical menu and proceed as follows:

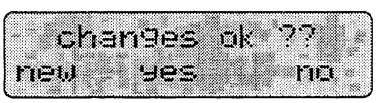
1. Enter **SCN 5555 / 5556**.
   ⇨ Display shows e.g.:
   or [preset snack / start]



2. Press button [3] 'start'.
   ⇨ A scroll bar shows process.
   ⇨ Automatic basic configuration is carried out.

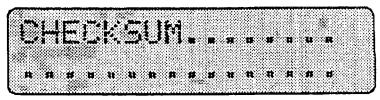


   ⇨ Then display shows again:

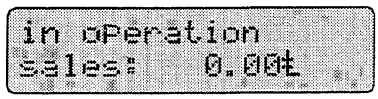


. . . if you want to accept basic configuration . . .

3. Press button [2] 'yes'.
   ⇨ Display shows:
   ⇨ After that all motors will be triggered.

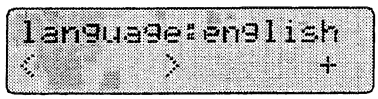


   ⇨ Then display shows:

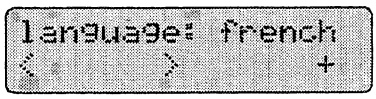


. . . if you want to change language of the display . . .

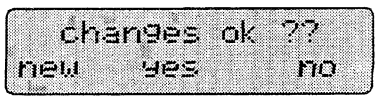
1. Enter **SCN 5100**.
   ⇨ Display shows:



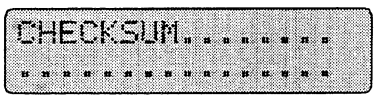
2. Press button [3] '+', until top RH side of the display shows 'french'.
   ⇨ Display shows:



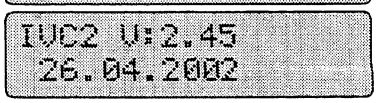
3. To quit the menu press button [R].
   ⇨ Display shows:



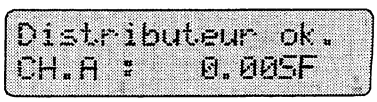
4. Confirm change of language with button [2] 'yes'.
   ⇨ Display shows:



   ⇨ Then display shows:



5. After that all motors will be triggered.
   ⇨ After that display shows:



☑ Automatic basic configuration has been carried out, language of the display is french.

7.2 Specify basic configuration

For specifying basic configuration the table below will help you. Call up the menus one after another and perform settings as described in the table.

Individual settings like prices, language, change return, motor and price groups or machine specific settings can be done additionally. You will find corresponding information in the chapter 'Working with the technical menu', see page 17.

Before you start programming you should have performed the basic configuration program (see page 71).

1. Call up the menus mentioned in the table below by means of the shortcut numbers (SCN).

2. Set parameters in the menus, depending on the coin system (ECA or MDB), as shown in the table below.

		cigarette machine		snack machine	newspaper machine
menu section	**SCN**	**ECA**	**MDB**	**MDB**	**MDB**
Pr.Gr.	**1100**	vend price	vend price	vend price	vend price
language	**5100**	as per selection	as per selection	as per selection	as per selection
model	**5101**	cigar VM	cigar VM	Snack	Newspaper
change giver	**5102**	none	as per selection	as per selection	as per selection
single vend	**5103**	off	as per selection	as per selection	as per selection
vend required	**5104**	off	off	off	off
exact money	**5105**	on	off	off	off
coin acceptor	**5106**	on	off	off	off
escrow unit	**5107**	on	off	off	off
MDB changer	**5108**	off	on	on	on
MDB card	**5110**	off	off	off	off
MDB bill	**5111**	off	on	off	off
wur-ret	**5113**	off	off	off	off
decimal point	**5114**	on	on	on	on
price digits	**5115**	6	6	6	6
max. return	**5116**	00.00	personal setting	personal setting	personal setting
max. credit	**5117**	10.00	personal setting	personal setting	personal setting
cash input 1	**5118**	off	off	off	on
cash input 2	**5119**	off	off	off	off
cash input 3	**5120**	off	off	off	off
M.Stop o. cash	**5121**	off	off	off	off
Sel	**5122**	2 digits	2 digits	2 digits	1 digit
motors	**5201**	all motors available released	all motors available released	all motors available released	all motors available released
motors parallel	**5211**	e.g. 10||10	e.g. 10||10	e.g. 10||10	e.g. 10||10
motor groups	**5221**	motor 10 succ 10	motor 10 succ 10	motor 10 succ 10	motor 10 succ 10

		cigarette machine		snack machine	newspaper machine
menu section	SCN	ECA	MDB	MDB	MDB
selection - motor	5232	sel. 10 = motor 10	sel. 10 = motor 10	sel. 10 = motor 10	sel. 10 = motor 10
VIDTS	5300	PulsLight	PulsLight	off	off
display time	5302	off	off	off	on
Summer time	5305	auto	auto	auto	auto
print *receipt*	5308	off	off	off	off
ESC cut	5309	270.000	270.000	270.000	270.000
print baud	5310	4800	4800	4800	4800
print bits	5311	8	8	8	8
print parity	5312	none	none	none	none
print auto LF	5313	on	on	on	on
print stop bit	5314	2	2	2	2
print delay	5315	750ms	750ms	750ms	750ms
empty *lights*	5316	off	off	off	off
s-print baud	5317	2400	2400	2400	2400
s-print bits	5318	8	8	8	8
s-print parameter	5319	none	none	none	none
PC baud	5320	115k	115k	115k	115k
PC bits	5321	7	7	7	7
PC parity	5322	even	even	even	even
advertising	5323	0	0	0	0
Show on open	5324	personal setting	personal setting	personal setting	personal setting
coin	7012	coin 1 - 6 released	data bloc transfer	data bloc transfer	data bloc transfer
coin max.	7013	all set to 99	all set to 99	all set to 99	all set to 99
coin valuet	7014	test SCN 4102, enter values here	data bloc transfer	data bloc transfer	data bloc transfer
note	7016	all locked	all locked	all locked	all locked
note max.	7017	all set to 0	all set to 0	all set to 0	all set to 0
note	7018	all 0	all 0	all 0	all 0
coin contact	7021	all national	all national	all national	all national
bank note contact	7022	all national	all national	all national	all national
cf	7030	1	1		
Euro begin	7031	01.01.2002	01.01.2002	01.01.2002	01.01.2002
end national	7032	01.01.2002	01.01.2002	01.01.2002	01.01.2002
currency take	7033	national	national	national	national
currency display	7034	national	national	national	national
internal currency	7035	national	national	national	national
CPC credit	7036	national	national	national	national

		cigarette machine		snack machine	newspaper machine
menu section	SCN	ECA	MDB	MDB	MDB
tube	7051	All locked	data bloc transfer	data bloc transfer	data bloc transfer
tube (value)	7052	0.00	data bloc transfer	data bloc transfer	data bloc transfer

3. If you want to configure individual settings to the IVC2 control unit you can use different values.
4. When all settings are programmed leave the technical menu and store data.
5. Carry out main motor test, see page 35.
6. Clear statistical data, see page 16.
7. Check vend prices, see page 11.
8. Test reprogramming in detail.

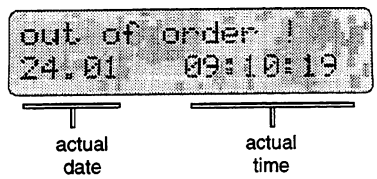
NOTE: After exchange of the IVC2 control unit and if MDB system is installed you have to carry out data bloc transfer.

8 Error messages and remedy

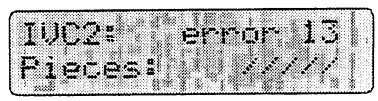
8.1 Error messages - display

The error messages in the table for searching and eliminating errors (see page 78) make the machine switch to 'out of order !'.

Then the display shows:



When you open the machine door, display shows number of the error, e.g.



Existing error has to be eliminated.

You will find corresponding information the the table for searching and eliminating errors.

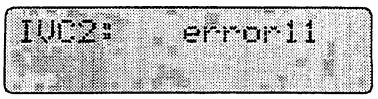
When error is rectified press button SERVICE on the IVC2 control unit or button 'S' on external service button.

Quit the menu by pressing button [3].

NOTE: In the menu 'error counter' (SCN 3510, see page 18) you can diplay sequence of errors occured.
In the menu 'error logbook' (SCN 3511, see page 19) you can display last 30 errors occured.

8.2 Table for searching and eliminating errors

Actual error messages are displayed. By means of the error number you will find corresponding information about the error and remedy in the table below.



NOTE: If a * (star) follows the error number, the machine will switch to 'In operation' automatically when error is eliminated.

Error messages could also appear through incorrect configuration settings. Check settings of the machine.

error no.	error description	possible reason and remedy
11	Response of the motor escrow unit is missing (coin return).	Motor escrow unit jams when coin return starts.
12	Response of the motor escrow unit is too long (coin return).	Motor escrow unit jams during coin return or the microswitch does not switch to end position.
13	Response of the motor escrow unit is missing (coin insertion).	Motor escrow unit jams during cash or when the loom is interrupted.
14	Response of the motor escrow unit is too long (coin insertion).	Motor escrow unit jams when cash starts.
Error messages 11 to 14 only apply to machines with Wurlitzer escrow unit.		
15*	Cash pulse longer than 5 seconds (Time Out).	Check wiring of the vend light gate. vend light gate defective or dazzle effect. (only applies to machines with vend light gate)
16	Current sensor defective.	Check wiring.
33	One or several drain drivers have short-circuited.	One or several connections DD1 to DD10 (plug P15) shorted to ground. This fault may appear at the IVC2 control unit, in the loom to the compartments or at the individual drive. An error can be examined in the menu 'motors', SCN 4220 (see page 35).
40	Two coin insertion channels active at the same time.	Two coin contacts / outputs were switched simultaneously.
41	1	
42	2	
43	3	For electronic coin acceptors (ECA) one output is switched too long or permanently. Change ECA.
44	4	
45	5	
46	6	
47	Two note channels active at the same time.	With parallel note output two outputs active at the same time. If this error appears frequently change the note acceptor.
48	Note input 1 pulse too long.	
49	Note input 2 pulse too long.	
50	One or several source driver 1-8 (IC 216) short-circuited.	Exchange loom or IVC2 control unit.

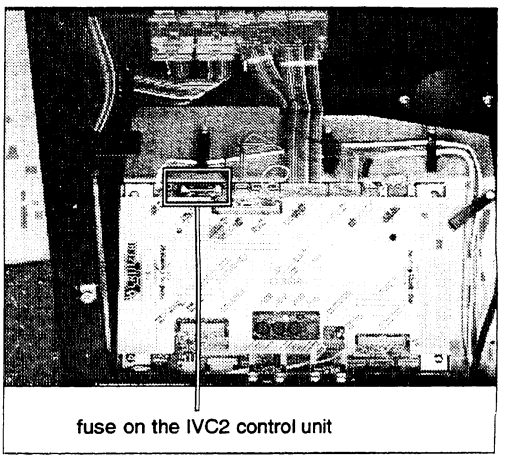
error no.	error description	possible reason and remedy
61	Error in the price memory, remedy of original not possible.	If this error appears again, check the battery voltage of the RAM (>2,8 V). If necessary, reprogramme or exchange the IVC2 control unit.
62	Error in the text memory 'changeable'.	
63	Error in the machine state memory.	
64	Error in the price groups.	
65	Error in the error memory.	
75	Rate of exchange not set.	SCN 7030, lowest rate of exchange is 1.
76	Error in the MDB data.	Data retrieval was not carried out, new data bloc transfer is required (SCN 5109)
77*	Data connection to the MDB coin system is interrupted.	MDB coin system does not exist or is defective or loom is interrupted or you did not wait for some 30 seconds after data bloc transfer.
84	MDB hopper or 5 tube changer adjusted incorrectly.	Check SCN 5112 or SCN 5113.
98*	Continous contact of the keyboard (yellow LED of the IVC2 control unit lights permanently).	One or several buttons of the keyboard have continously contact (poss. jammed). Check the keyboard or exchange.
99*	Deliberate setting 'out of operation' by the operator.	When you press button 'OPTION 1' on the IVC2 control unit and then close the machine door, this error will appear. While you open the door again this error will be eliminated.

9 Appendix

9.1 Fuse on the IVC2 control unit

All the circuits within the device work with low voltage (24 or 26volts). This low voltage is supplied by a transformer which converts the mains current.

A fuse T3.15amps is installed on the IVC2 control unit.



fuse on the IVC2 control unit

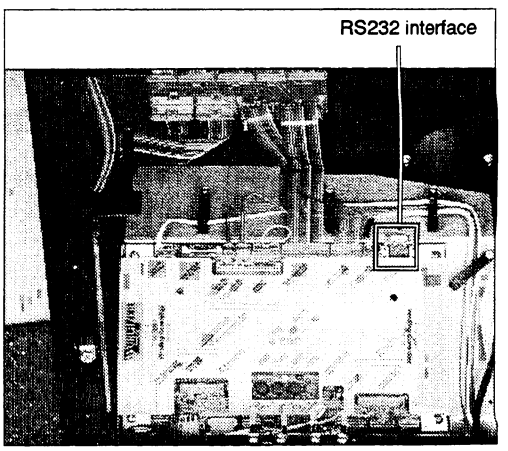
9.2 Printer for statistical data - connection and configuration

You can connect various printers to the IVC2 control unit. The interface parameters can be configured individually.

To connect a printer proceed as follows:

1. Connect the printer to the Rs232 interface.
2. You will find information about configuration of the printer in the table 'configuration part 2' see page 39 SCN 5310 to 5315.

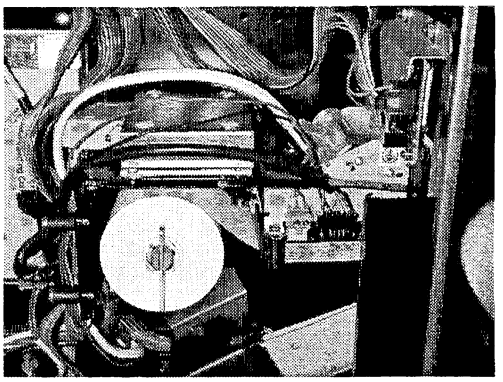
☑ After configuration the printer is ready to print out statistical data.



9.3 Receipt printer - configuration

Connection of the internal receipt printer is the same than of the external printer for statistical data, see page 80.

In addition you have to programme the parameter 'receipt prt', SCN 5308, to position 'on' in order to get a receipt after each vend.



NOTE: You can use the receipt printer also for print out of statistical data.

Standard receipt printout

The receipt contains headline, vend information and footline.

Beside these information you can also have further details in the printout like:

- consecutively numbered printout
- machine number
- number of location

If required, please contact Deutsche Wurlitzer GmbH.

```
************************
************************
    Wurlitzer
************************



************************
***      receipt      ***
************************
Date:  18.09.2002
Time:  10:31:37
************************
Your credit:     1.00 EU
Choise:  23      0.35 EU
Choice:  31      0.15 EU
Return money:    0.50 EU
Value added Tax:
*      Thank you!      *
```

9.4 Switch settings in programming

SCN	name	possible settings	SCN	name	possible settings
5100	language	0 = german 1 = english 2 = french 3 = editor	5101	model	0 = cigar VM 1 = Snack 2 = Newspaper 3 = Newspaper1
5102	change giver	0 = automatic 1 = normal 2 = 60sec. 3 = none	5103	single vend	0 = off 1 = on
5104	vend required	0 = off 1 = on	5105	exact money	0 = off 1 = on
5106	coin acceptor	0 = off 1 = on	5107	escrow unit	0 = off 1 = on
5108	MDB changer	0 = off 1 = on 2 = AltPay0	5110	MDB card	0 = off 1 = on
5111	MDB bill	0 = off 1 = on	5114	decimal point	0 = off 1 = on
5115	price digits	0 = 4 1 = 6	5118	cash input 1	0 = off 1 = on
5119	cash input 2	0 = off 1 = on	5120	cash input 3	0 = off 1 = on
5121	M. Stop o.cash	0 = off 1 = on	5201	motor option	0 = locked 1 = released 2 = free vend
5300	VIDTS data transfer	0 = off 1 = IRDA 2 = PulsLight	5302	time/date	0 = off 1 = on
5305	summer time	0 = auto 1 = fix	5310	print baud	0 = 19200 1 = 9600 2 = 4800 3 = 2400 4 = 1200 5 = 110
5311	print bits	0 = 8 1 = 7	5312	print parity	0 = even 1 = odd 2= none
5313	print autoLF	0 = off 1 = on	5314	print stop bit	0 = 1 1 = 2
5315	print delay	0= 0ms 1= 500ms 2= 750ms 3= 1500ms	5324	show on open	0 = cash 1 = sells
7012	coin	0= released 1= Cha emp. 2= cashbox 3= locked	7016	note	0 = released 1 = locked 2 = cashbox 3 = no change
7051	tube	0 = released 1 = locked			

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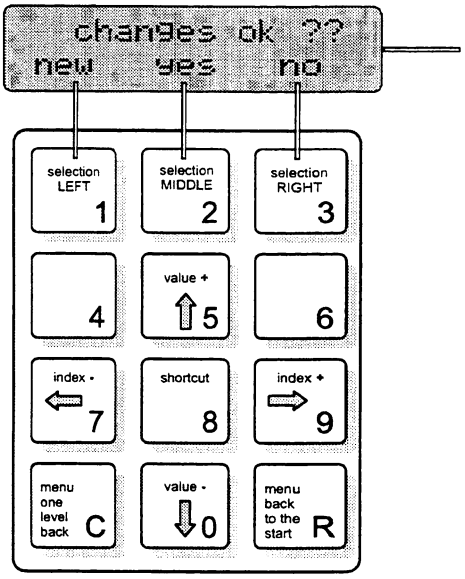
Button allocation in the technical menu

In general all selection buttons have the same functions in all menus. Allocation is shown in the following table.

For some menus the selection buttons have different functions (due to functional reasons), in this case the special functions are described at the corresponding place



Example:
Display when you call up technical menu

button	function
1	Performs the function shown in the bottom line RH side.
2	Performs the function shown in the middle of the bottom line.
3	Performs the function shown in the bottom line LH side.
4	Generally not assigned - if a function is allocated, the function is described at the corresponding place.
5	Increases the value displayed - e.g.: PrGr (price group) = **5.00 to 5.01.**
6	Generally not assigned - if a function is allocated, the function is described at the corresponding place.
7	Decreases the index by one value - e.g.: PrGr (price group) or mgr (motor group).
8	Shows the shortcut number of the current menu.
9	Increases the index by one value - e.g.: PrGr (price group) or mgr (motor group).
C	Jumps back one level in the menu tree. Is used to set the decimal point when entering decimal numbers.
0	For accessing the technical menu. To call up the GOTO display in the technical start menu **or (dependent on the menu)** reduces the value displayed - e.g. PrGr (price group) = **5.00 to 4.99.**
R	To leave the menu, for intermediate or final storage or rebuilt latest state of programming of the IVC2 control unit.

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MIKE RIGLY

5555 TO DUMP E-PROM

Part no.: 0066796 - Edition 4210