

1 SERVICE PROGRAM

When opening the cabinet and activating the cabinet interlock switch (pull out plunger), the phonograph is automatically switched from play mode to service mode.

In the service mode the user has available many valuable and easy-to-use aid programs. There are five main sections:

1. Statistical programs which support the reading, evaluating, printing and erasing of all counters (P01 to P12)
2. Programs which permit a standard setting by the manufacturer as well as settings for customers of all machine parameters (P20 to P39).
3. Programs which make possible an individual setting of a price table, but also offer the selection of a standard table out of 20 tables altogether (P40 to P46).
4. Programs which make possible the individual coin value setting for five channels, but also permit programming of one standard setting available for many countries (P50 to P56).
5. Testing programs which support a quick functional test of units as well as locating an error on location (P60/P61).

At delivery the phonograph is "non-coded", e.g. all data and programs are accessible in the service mode. Of course, all confidential data - they are marked in the last column of the following table by an "X" - can be locked via entry of a 4-digit code number (P39).

Short Program

After opening the cabinet and activating the cabinet switch manually, the statistical program "popularity" is automatically turned on. Display 1 shows program step "P01", Display 3 shows the least played CD.

Continue on to the following program steps by pressing "H".

When desiring another program step, press "C", Display 1: "P". After that one can select a program step directly by entering the desired program number and pressing "H".

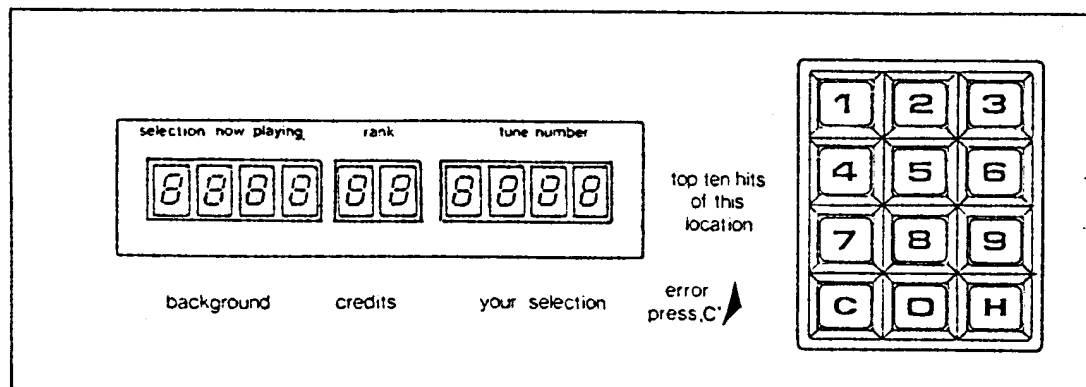
Return to normal program by pressing "C" twice.

Information (read-out of counters) of certain program steps through entry of code numbers.

Additional functions of certain program steps through entry of a code number and "H".

Standard settings in program steps P20, P40 and P50 through entry of table number and "H" within that program step.

SELECTOR and DISPLAY PANEL



Display panel with displays 1, 2 and 3 as well as 12 button selector

1.1 Statistical program

1.1.1 Popularity—from least played title upward

Display Designation	Remarks	x
PO1 Number of least played CD.	Enter number "0" (is switched on automatically).	
Number of next least played CD, etc. upwards to the most played CD.	Advance with "1".	
Rank of CD displayed.	Enter the number "2". The next display corresponds to the rank of this record Example display "5" corresponds to the fifth least played record.	
Total of this CD played (max. 255).	Enter number "3". If a pop. counter is greater than 200 at "power off", all counters are divided by 2 (normalized). An "r" appears on display 2 until the counters are reset (the pop. dis- play is relative).	
Information on a certain CD.	Enter the number "4", the desired CD number and "H". The desired information on this CD can be called up as described previously with the keys "1" through "3".	

1.1.2 Popularity, from best title upwards

PO2 Number of most played CD.	Enter number "0" (is switched on automatically).	
Number of next most played CD etc. down to the least played CD.	Advance with "1".	
Rank of CD displayed.	Enter the number "2". The next display corresponds to the rank of this record. Example display "5" corresponds to the fifth least played record.	
Total of this CD played (max. 255).	Enter number "3": If a pop. counter is greater than 200 at "power off", all counters are divided by 2. An "r" appears on display 2 until the counters are reset. Get actual popularity, multiply all by 2.	
Information on a certain CD.	Enter the number "4", the desired CD number and "H". The desired information on this CD can be called up as described previously with the keys "1" through "3".	

1.1.3 Counter read-out

Display Designation	Remarks	x
P03 Cash balance in monetary (as programmed by the settings in P51 through P55). 5 digits.	Enter number "0" (is switched on automatically).	x
Cash balance-accumulated-5 digits.	Enter the number "1". Value shown must be multiplied by 100 to get total monetary units.	x
P04 Play counter.	Enter number "0" (is switched on automatically).	x
Play counter, accumulated.	Enter number "1".	x
P05 Number of selected title.	Enter number "0" (is switched on automatically).	x
P06 Number of album selections.		x
P07 Number of free credits.		x
P08 Number of background titles.		x

1.1.4 Counter and credit reset

P10 Total reset of popularity (P01, P02) the HIT-parade, the counters P03 through P08 and credits.	Enter number "1" and "H".	x
Resetting the popularity (P01, P02) and HIT-parade.	Enter number "2" and "H".	
Resetting the counters (P03 through P08).	Enter number "3" and "H".	x
Cancel credits.	Enter number "4" and "H".	

1.1.5 Data transfer

P11 Data transfer and memory (storage) with the DATA PRINT. (from Progr.-Index 004)	Plug DATA PRINT into "Service Socket" of control unit. Enter Code "1" and "H". Counters (P03-P08) and popularity will be transferred. Display 3 "E0" appears in case of error during data transfer. Also see description DATA PRINT.	
P12 Transfer to DATA PRINT. Note: If phonograph is "coded", only the decoded values are printed out unless the code number is entered. (from Progr.-Index 003)	Plug printer into the "service socket" on the control unit. Enter "1" = counters (P03 through P08) or "2" = counters (P03 through P08), settings (P21 through P37, P39) or "3" = counters (P03 through P08), popularity (P01, P02) or "4" = counters, settings, popularity, If overflow has taken place, the popularity is relative, the multiplying of overflows is printed out also. If the printer does not operate, "E0" appears on display 3.	

1.2 Specific Settings

1.2.1 Standard Settings

Display Designation	Remarks	
P20 Programming of steps P21 through P39 (for factory setting see table 1).	Press "1" and "H". If values deviating from the table are desired, they can be entered according to the following program steps.	x

Standard table for specific settings in program step P20.

The following table shows the basic setting (factory setting) of the phonograph.

Tab.-No. Result in the individual program step:

- P21: 0000 = unit code (for recording device)
- P22: 0024 = maximum choice CD/track (100 CD's/24 tracks)
- P23: 200 = free credits
- P24: 15 = interval for random play in minutes
- P25: 10 = Number of CD's for background
- P26: 1105 = light organ during standby
- P27: 1000 = light organ during play
- P28: 3116 = maximum Volume of both channels for coin-selected titles and background-CD
- *)P30: 0 = No limit of playing time for a title
- *)P31: 0 = Playing in sequence of selection
- *)P32: 0 = No limit on playing titles on the same CD
- P39: 0000 = code number (data and program settings not coded)

} Only for models with light organ /
luminous effects

*) from Progr.-Index 004

1.2.2 Code number for DATA PRINT

P21 Machine code number for DATA PRINT	Enter code number between "0" and "9999" as well as "H".	x
---	--	---

1.2.3 Position Settings



P22 Number of maximum choice CD's and tracks	Enter desired number between "0101" and "0099" as well as "H". CD-Nr. 00 ~ 100. Example for 100 CD's / 24 tracks: "0024".	
---	--	--

1.2.4 Free credits



P23 Number off free credits.	Enter desired number and "H". "0" to "199": The number of free credits set can be released individually by the FREE CREDIT key on remote control. "200": An unlimited number of free credits can be set and released by the FREE CREDIT key on remote control. "201": The phonograph is continuously switched to "free credits" when the FREE CREDIT key is pressed (Credit Display "99"). The phonograph is switched back to operating mode when the FREE CREDIT key is pressed again.	x
-------------------------------------	--	---

1.2.5 Random title and Background

Display Designation	Remarks	x
P24 Time interval for random title.	Enter desired time interval between "0" and "255" minutes, followed by "H". (No random titles are played when "0" is entered).	x
P25 Number of background music CD.	Enter desired number between "0" and "100", followed by "H". Background starts counting downwards starting with maximum number of CD's up (P22) to set number of background positions. With setting "0" no background operation.	



1.2.6 Light Console / Light Organ (Only for models with light organ / luminous effects)

	A	B	C	D		x
P26 Luminous effects for "stand by mode" or P27 Luminous effects for "play mode"	0	0	0	1	Setting "A" corresponds to the switching characteristic: "0"-slow to "1"-fast. Setting "B" corresponds to speed of intervals (0-3). Setting "C-D" corresponds to the various types of light effects "1" through "15". Complete entry with the "H"-button.	
	↓	↓	↓	↓		
P26 Continuous light for "stand by mode" or P27 Continuous light for "play mode"	0	0	0	0	Setting "B" corresponds to the desired brightness ("0" through "3"). Complete entry with "H"-button.	x
		↓				
P27 Light organ in "play mode".	1	0	0	0	Setting "B" is for the desired basic brightness ("0" through "3"). Complete entry with the "H"-button.	x
		↓				

1.2.7 Volumes for Regular and Background Music

P28 Maximum volume.	Enter two digits each for desired maximum volume of normally chosen and background titles as well as "H". e.g.:	x
---------------------	--	---

31	24	
		Background
		Normal



1.2.8 Maximum Playing Time

P30 Maximum playing time for a title (from Progr.-Index 004)	Enter desired time in minutes between 0 and 99 and then press "H". With "0" no limit of playing time.	x
---	--	---

1.2.9 Sequence of CD's playing

P31 Sequence of CD's playing (from Progr.-Index 004)	Enter Number 0, 1 or 2 then press "H". 0 = in sequence of selection (FIFO) 1 = in numerically increasing sequence 2 = random sequence	x
---	--	---

1.2.10 Maximum of tunes played on the same CD

Display Designation	Remarks	x
P32 Maximum of tunes played on the same CD (from Progr.-Index 004)	Enter desired maximum number of tunes played and then press "H". With "0" no limit.	x

1.2.11 Authorization

P38 Authorization.	Enter correct code number and "H". Each of the four digits is confirmed by "P". After closing with "H" "PPPP" is shown and the operator is thereby given authorization. Only the correct code number enables access to protected data. After closing of cabinet or going back to regular program by pressing "C" twice, the programs are protected again.
---------------------------	---

1.2.12 Code number

P39 Code number.	Changing of code number is only possible when operator has been authorized in program step P38. Enter new code number and "H". Each digit is confirmed after entry with "P". After closing with "H" "PPPP" is shown. Possible entries between "0000" and "9999". If "0000" is programmed, the machine is not protected and access to all programs is possible without authorization. A programmed code number is not shown anymore, so please remember your code number!	x
-------------------------	--	---

1.3 PRICE SETTINGS

1.3.1 Standard Settings, from Progr.-Index 004

P40 Programming of the program steps P41 through P46 (Standard setting).	Enter corresponding table No. and "H". If values deviating from those in the table desired, they can be changed according to the following program steps (P41 through P46).	x
---	--	---

Standard settings for plays per monetary value in program step P40. The result of the programming of a table ("0" through "20") shows the number of plays per monetary value allocated to the program steps P41 through P45. The monetary values are programmed in monetary value units as they are set in P50 through P55: example table 17, P41: If no bonus is to be given for a high monetary value, it is sufficient to program only the small monetary value, the total of the small values results in the larger value; example table 17: 1 x 25 c = 1 play + 100 c = 7 plays.
Standard settings for P46 = "0".

Table- No.	Display of Program Number					Remarks/ as set by the factory
	P41 Sp/Gw	P42 Sp/Gw	P43 Sp/Gw	P44 Sp/Gw	P45 Sp/Gw	
0	00 000	00 000	00 000	00 000	00 000	no coin conversion in this setting.
1	01 050	01 050	01 050	01 050	01 050	New Zealand 1 play = 50 c (NZ)
2	01 020	01 020	01 020	03 050	03 050	Belgium 1 play = 20,- Bfr 3 plays = 50,- Bfr (B)
3	01 005	01 005	03 010	03 010	07 020	If desired, please adjust 1 play = 5,- 3 plays = 10,- 7 plays = 20,-
4	02 050	02 050	05 100	05 100	12 200	Austria 2 plays = 5,- öS 5 plays = 10,- öS 12 plays = 20,- öS (A)

5	02 010 02 010 05 020 05 020 12 050	Germany	2 plays = 1,- DM 5 plays = 2,- DM 12 plays = 5,- DM	(D)
6	01 050 01 050 01 050 03 100 03 100	USA	1 play = 2x 25 c 3 plays = 4x 25 c	(USA)
7	02 010 02 010 02 010 12 050 12 050	Norway	2 plays = 1,- Kr 12 plays = 5,- Kr	(N)
8	01 010 01 010 03 020 03 020 03 020	Venezuela	1 play = 1,- Bol 3 plays = 2,- Bol (7 plays = 5,- Bol)	(YV)
9	01 010 01 010 03 020 03 020 10 050	Ireland	1 play = 10 p 3 plays = 20 p 10 plays = 50 p	(IR)
10	03 010 03 010 07 020 07 020 18 050	Switzerland	3 plays = 1,- sfr 7 plays = 2,- sfr 18 plays = 5,- sfr	(CH)
11	01 030 01 030 02 050 02 050 05 100	United Kingdom Denmark	1 play = 30 p 2 plays = 50 p 5 plays = 1 £	(GB) (DK)
12	01 020 01 020 01 020 03 050 03 050	Jugoslavia (Din) Finland (mK)	1 play = 2x 1,- 3 plays = 5,-	(YU) (SF)
13	01 020 01 020 03 050 03 050 07 100	Union of South Africa France	1 play = 20 c 3 plays = 50 c 7 plays = 1,- R	(SAU) (F)
14	01 040 01 040 02 060 03 080 04 100	Australia	1 play = 2x 20 c 2 plays = 3x 20 c 3 plays = 4x 20 c 4 plays = 1 Dollar	(AUS)
15	01 025 01 025 01 025 01 025 01 025	Canada Dutch Antilles	1 play = 25 c 4 plays = 1 NAF	(CAN) (NA)
16	01 025 01 025 01 025 05 100 05 100	Spain (pts)	1 play = 0,25 5 plays = 1,-	(E)
17	01 050 01 050 03 100 03 100 18 500	USA	1 play = 50 c 3 plays = 1 \$ 18 plays = 5 \$	(USA)
18	01 100 01 100 03 250 03 250 07 500	Netherlands	1 play = 4x 25 c 3 plays = 2,5 hfl 7 plays = 5 hfl	(NL)
19	01 100 01 100 03 200 03 200 05 300	Japan	1 play = 100 Yen 3 plays = 2x 100 Yen 5 plays = 3x 100 Yen	(J)
20	01 040 01 040 01 040 03 100 03 100	Italy	1 play = 2x 200 L 3 plays = 2x 500 L	(I)

1.3.2 Price List (Number of Selections/Monetary Value)

Display Designation	Remarks	x
P41 Number of selections per coin (smallest value).	Enter desired number of plays coin (smallest value) and "H". Entry sequence: 2 digits for number of plays. 3 digits for corresponding coin e.g. 01 020 correspond to one play for 20 pence. Largest programmable number of plays up to 63, price list from 005 to 995.	x
P42		x
P43 Operating display are	Note: All five program steps must be programmed with the price classes in the sequence or their priority. For	x
P44 analogous to program	less than 5 price classes program more than once or	x
P45 step P41	set to "00 000".	x
P46 Number of required credits for one album.	Enter desired number and "H". At "0" no album selection allowed.	x

1.4 MONETARY SETTINGS

1.4.1 Standard Settings

P50 Programming of the program steps P51 through P55 (Standard setting). Enter corresponding table and "H".
 If values other than those in the table are desired, they can be changed according to the following program steps (P51 through P55). x

The monetary value settings in the individual program steps are associated with the corresponding coin channel: P51 for channel 1; P52 for channel 2, etc. to P55 for channel 5. This table shows the coin values for the corresponding channel in the currency of the columns P51 through P55.
 Standard setting of P56 = "0".

Table- No.	Display of Program Number P51 (Channel 1)	P52 (Channel 2)	P53 (Channel 3)	P54 (Channel 4)	P55 (Channel 5)	Remarks/ as set by the factory
0	000	000	000	000	000	no coin conversion in this setting
1	010 1,- DM 1 Bol 1,- sfr	050 5,- DM 5 Bol 5,- sfr	020 2,- DM 2 Bol 2,- sfr	000 -,- -,- -,-	000 -,- -,- -,-	Germany Venezuela Switzerland (YV) (D) (CH)
2	050 5 S	200 20 S	100 10 S	000 -,-	000 -,-	Austria (A)
3	020 200 L	010 100 L	050 500 L	000 -,-	000 -,-	Italy (I)
4	000 -,- -,- -,-	050 5 mK 5 Kr 5 Din	010 1 mK 1 Kr 1 Din	000 -,- -,- -,-	000 -,- -,- -,-	Finland Norway Jugoslavia (N) (SF) (YU)
5	025 25 C	250 2,5 hfl	100 1 hfl	000 -,-	000 -,-	Netherland (NL)
6	000 -,-	100 1,- NAF	025 0,25 NAF	000 -,-	000 -,-	Netherland Antillen (NA)
7	000 -,-	020 20 Bfr	005 5 Bfr	000 -,-	000 -,-	Belgium (B)
8	010 1 Fr 1 dkr	050 5 Fr 5 dkr	100 10 Fr 10 dkr	000 -,- -,-	000 -,- -,-	France Denmark (DK) (F)
9	020 20 p	050 50 p	010 10 p	000 -,-	000 -,-	United Kingdom/ Ireland (IR) (GB)
10	010 10 c	050 50 c	025 25 c	000 -,-	000 1 Dollar	USA (USA)
11	000 -,-	025 25 c	000 -,-	000 -,-	100 1 Dollar	Canada (CAN)
12	020 20 c	100 1 R	050 50 c	000 -,-	000 -,-	Union of South Afrika (SAU)
13	100 1 Dollar 100 Yen	050 50 c 50 Yen	020 20 c 20 Yen	000 -,- -,-	000 -,- -,-	Australia Japan (J) (AUS)
14	000 -,-	025 25 pts	100 100 pts	000 -,-	000 -,-	Spain (E)

mechanical Coin Acceptor

Monetary setting for electr. Coin Acceptor see chapter 10,
Program Table 209 955

Table- No.	Display of Program Number P51 (Channel 1)	P52 (Channel 2)	P53 (Channel 3)	P54 (Channel 4)	P55 (Channel 5)	Remarks/ as set by the factory
15	100	020	010	050	000	France United Kingdom
	10 Fr	2 Fr	1 Fr	5 Fr	-,-	
	1 £	20 p	10 p	50 p	-,-	
16	050	010	000	020	000	Germany
	5,- DM	1,- DM	-,-	2,- DM	-,-	
17	050	010	005	020	000	Switzerland Italy New Seeland
	5,- sfr	1,- sfr	1/2 sfr	2,- sfr	-,-	
	500 L 50 c	(100 L)	(50 L) 5 c	200 L 20 c	-,- -,-	
18	000	050	010	100	000	by 3-Channel Denmark
	-,-	5 dkr	1 dkr	10 dkr	-,-	
	100	010	000	050	000	
	10 dkr	1 dkr	0,25 dkr	5 dkr	-,-	
	100	050	010	100	000	bei 4-Channel (1 A) Denmark
	10 dkr (neu)	5 dkr	1 dkr	10 dkr (alt)	-,-	
19	200	050	010	100	000	Austria
	20 S	5 S	1 S	10 S	-,-	
20	025	250	500	100	000	Netherland
	25 c	2 1/2 hfl	5 hfl	1 hfl	-,-	

electr. Coin Acceptor

1.4.2 Monetary Values (Allocated to coin channels 1 through 5)

Display	Designation	Remarks	x
P51	Coin value channel 1.	Enter desired coin value for channel 1 and "H". Example: "010" corresponds to 10p, "020" to 20p and "100" corresponds to 1 £. Note: When a coin is inserted in the program steps P50 through P55 the channel assigned to this coin is automatically displayed on display 1; P51 for channel 2 etc. to P55 for channel 5. Not used channels are set to "0"!	x
P52	Operation and display	Monetary Setting for electr. Coin Acceptor see chapter 10, Program Table 209 955	x
P53	are analogous to		x
P54	program step P51.		x
P55			x
P56	Bonus credits for bills.	Enter desired number and "H". When a dollar bill is inserted (Channel 5/P55), the programmed value is added to the credit.	x

1.5 TEST PROGRAMS

The displays in this program step acts as test aids for testing the phonograph. In the event of a malfunction the defective unit can be determined or a malfunction resulting from incorrect settings can be recognized in a simple manner with the aid of these tests. Certain displays are aids for the adjustment of the playing mechanism.

Switch on test program: Open cabinet lid pull out Interlock cabinet switch
 Display 1 shows "P01", press letter "C".
 Display 1 shows "P".
 Press number 60 and "H", Display 1 shows "P60".

1.5.1 Display Test, Display 1 "P60"

This program tests the lights and displays on the display circuit board. After starting "F1" (first function test) appears on display 2.

The test is run through in steps:

1. All 5 display lights together.
2. The digits are switched on one after another individually with "8".
3. The display lamps 1 through 5 individually.
4. Displays together, running through the numbers "0" through "9".

The "F1" is displayed for approx. 2 seconds before the test repeats, itself.

Designation	Remarks
Display test -continuous test-	Enter "1" and "H". Display 2 "F1".
Stop test sequence.	Enter "H". The light "10 top hits" comes on.
Continue test sequence.	Enter "H" again. The light "10 top hits" goes off.
Terminate test.	Enter "C" once, display 1 "P60" or actuate cabinet switch, the unit returns to the regular program.

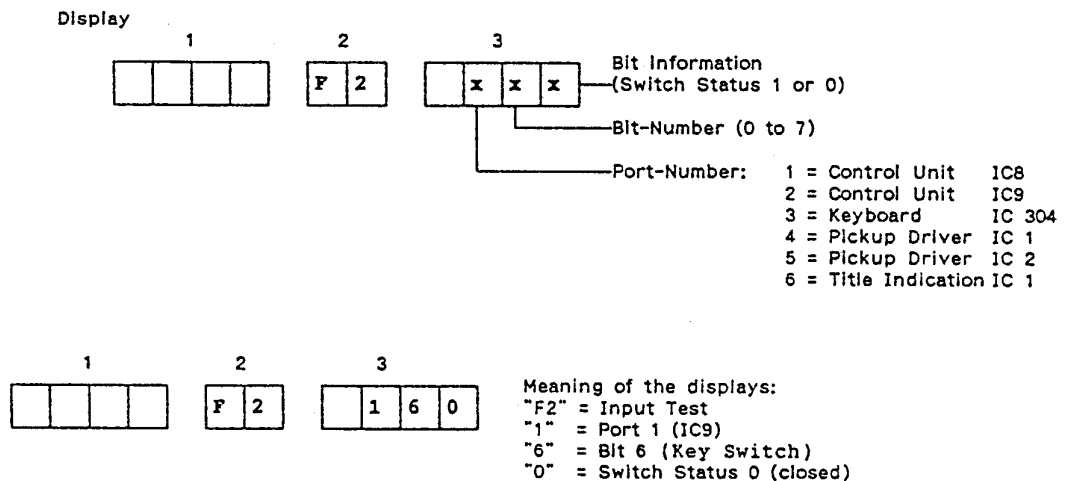
1.5.2 Input Test, Display 1 "P60"

In the following test the functions of all entries of Input Ports 1-6 can be tested:

Port 1, Port 2 : Control Unit
 Port 3 : Keyboard (Display Board)
 Port 4, Port 5 : Pickup Driver
 Port 6 : Title Indication

Every input change is shown on the display as follows:

Input Test Enter "2" and "H", Display 2 "F2" (second function test).



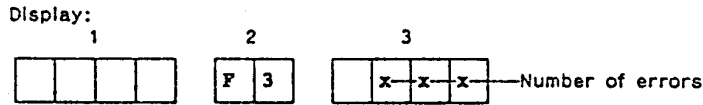
Instruction: The accuracy of the inputs from the keyboard can be checked due to the entry connections simply by selecting a title!

Terminate test. Enter "C" 1, display "P60" or actuate cabinet switch, the phonograph returns to the normal program.

1.5.3 Continuous Run I

The machine is switched to continuous run. Now every CD is played continuously for 16 sec. beginning with the first selection. All errors of the CD changer or CD player are registered.

Continuous Run 1 Enter "3" and "H", Display 2 "F3".
After that select the CD with which to begin.

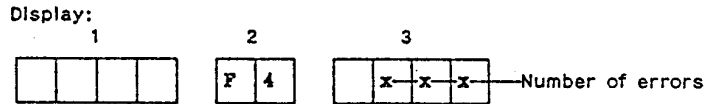


Terminate test. Actuate housing switch.

1.5.4 Continuous Run 2

The machine is switched to continuous run. All selected titles are played for 16 sec. All errors of the CD changer or player are registered.

Continuous Test 2 Enter "4" and "H", Display 2 "F4".
The select any title.



Terminate test. Actuate housing switch.

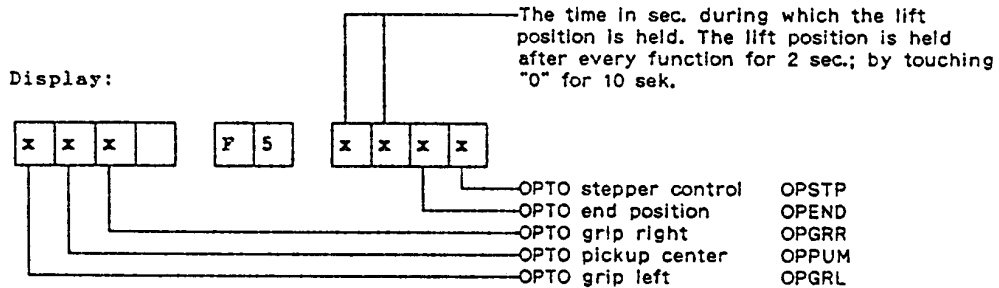
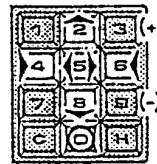
1.5.5 CD changer Test

All functions of the changer can be tested individually.

CD changer test Enter "5" and "H", Display 2 "F5".

Input	Function
1	CD-Player, Start/Stop
2	Lift, upwardw
8	Lift, downwards
4	Grip left
6	Grip right
5	Return holder
0	Stop lift at magazine space
3	*) Motor steps, upwards (per 0,5 mm)
9	*) Motor steps, downwards (per 0,5 mm)

Keep in mind the code numbers for the individual changer functions as per the following keyboard illustration:



Meaning of displays: OPTO lit up = "0", OPTO darkened = "1".

Terminate test. Actuate housing switch.

1.5.6 Track selection of CD test records

P61 Track selection of CD test records (more than 15 tracks per record).	Select the required CD record and track number and press "H". e.g. 0123 - Disc 01, Track 23. The selected title will be stored and played after returning to play mode.
---	---

1.5.7 Read-out of errors

P62 Error code of last error (see descr. error displays).	Enter "0". (Is automatically switched on).
Error code of previous errors (see descr. error displays).	Advance with key "1". Up to max. 10 errors.
At error code 6x no. of CD at which error occurred. At error code 9x no. of cover at which error occurred.	Enter "2".
Time since power on or start of test P60/3 or P60/4 when error occurs.	Enter "3". Display in hrs., min.
Cancellation of stored error code.	Enter "4", "1" and "H".
