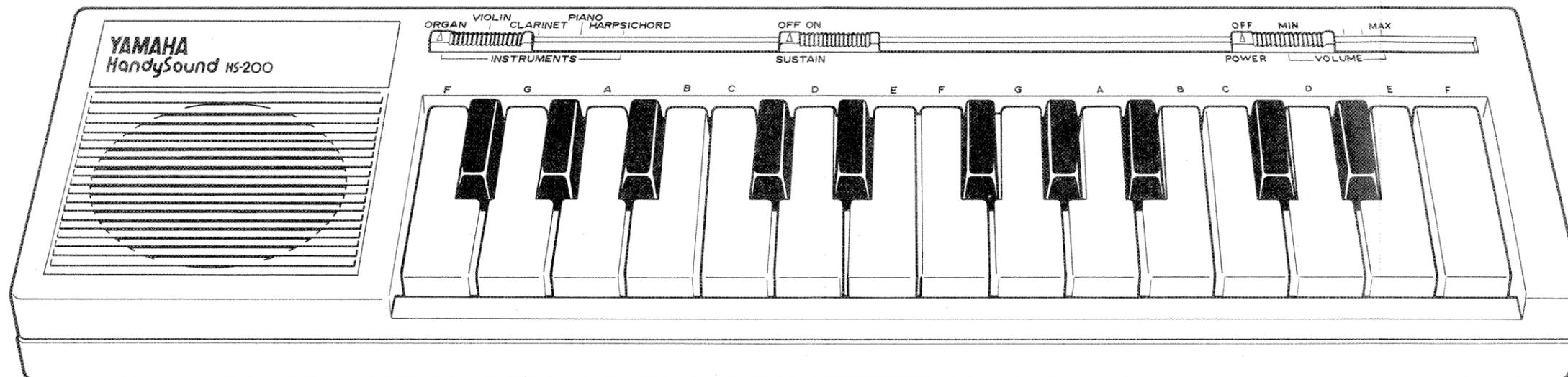
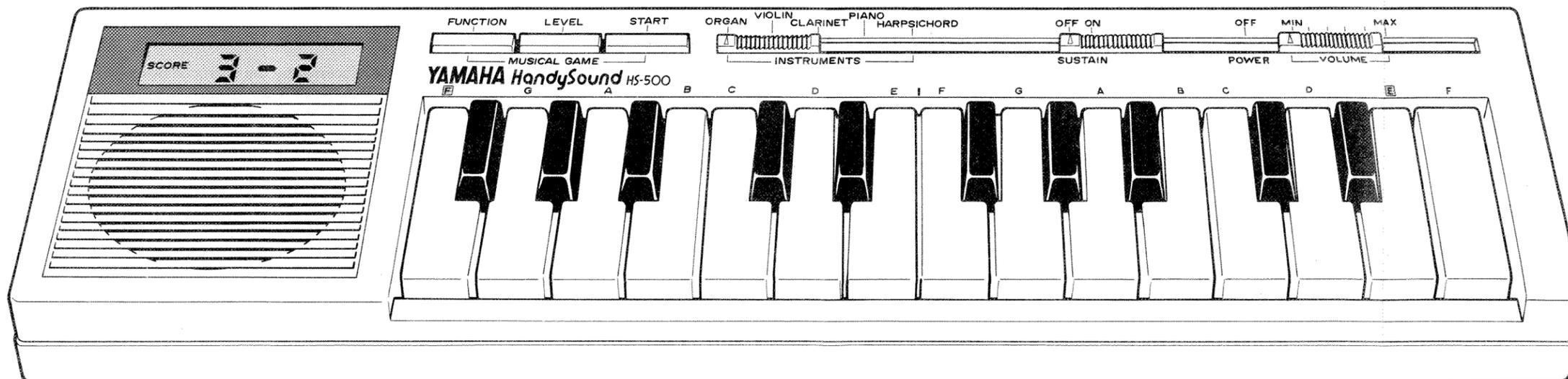


PANEL LAYOUT

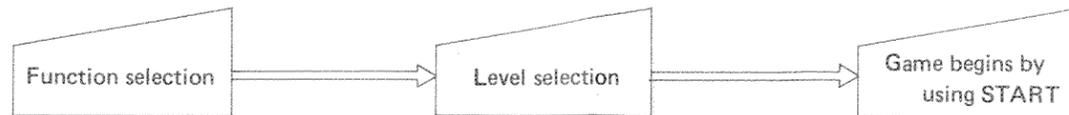
HS-200



HS-500



1. OPERATING PROCEDURE



KINDS OF GAMES (FUNCTION)

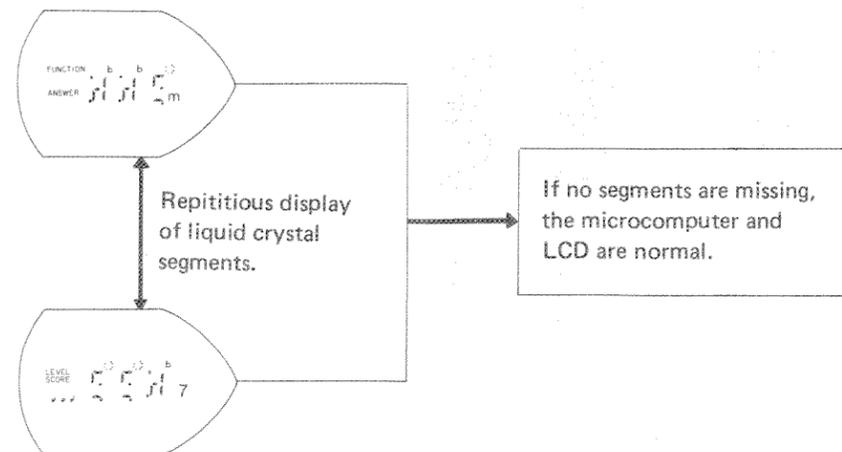
- Function 1: Keyed note name display (not a game)
- Function 2: Note name guessing game
- Function 3: Note guessing game
- Function 4: Phrase guessing game
- Function 5: Chord guessing game
- Function 6: Tennis game

LEVELS

3 levels from 1 to 3.

2. MICROCOMPUTER AND LCD DISPLAY TEST

If the is turned ON while simultaneously pressing the "FUNCTION" and "START" switches, the microcomputer and LCD display will go into a test mode.

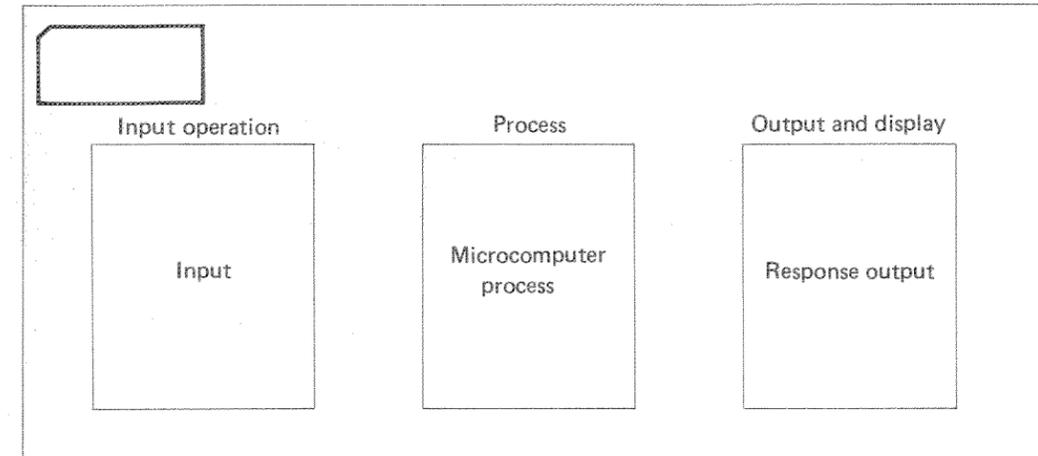


Musical Game Functions & Operations(HS-500)

3. MANIPULATION AND OPERATION

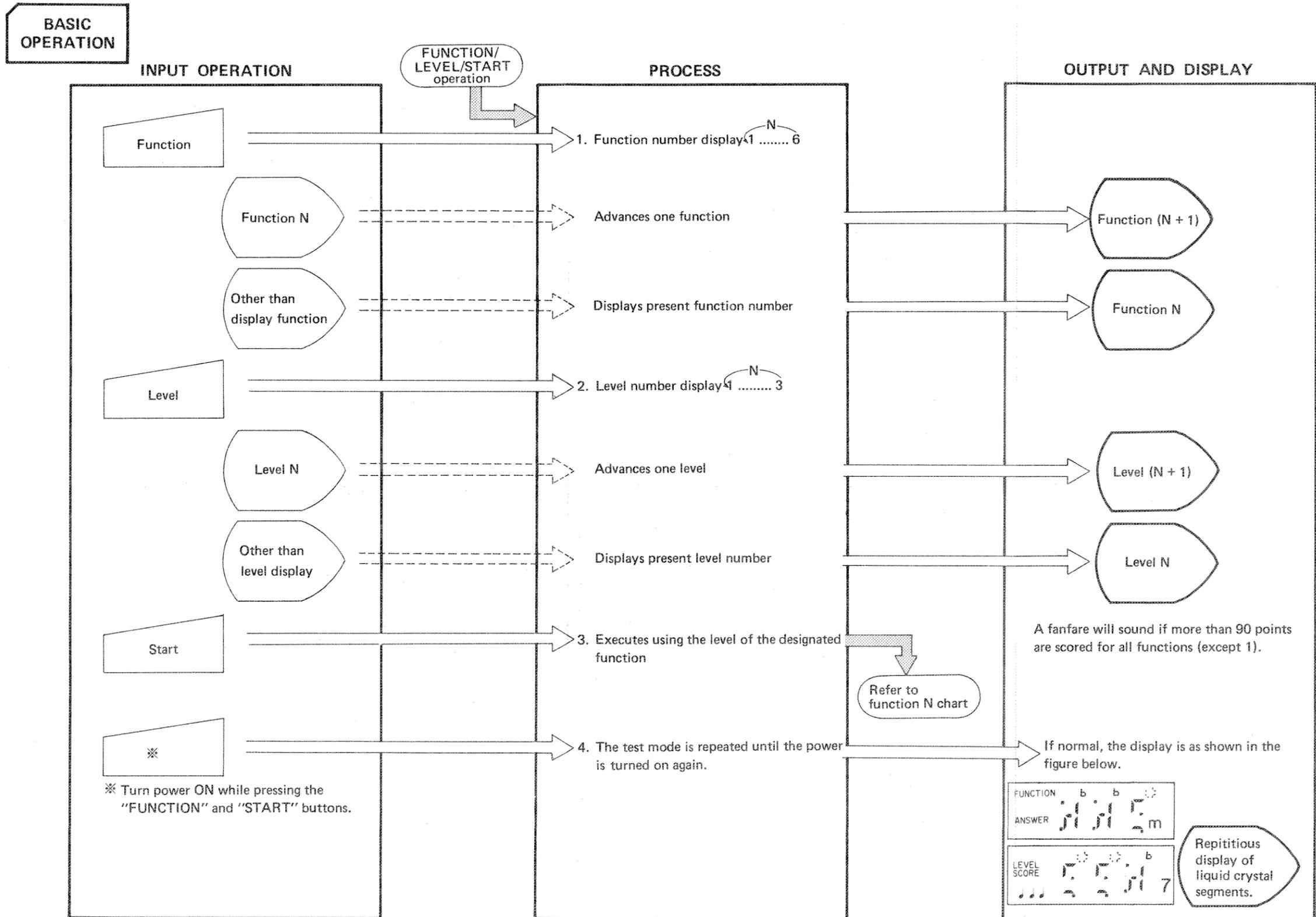
The manipulation and operation for each function are shown below.

• How to read the chart

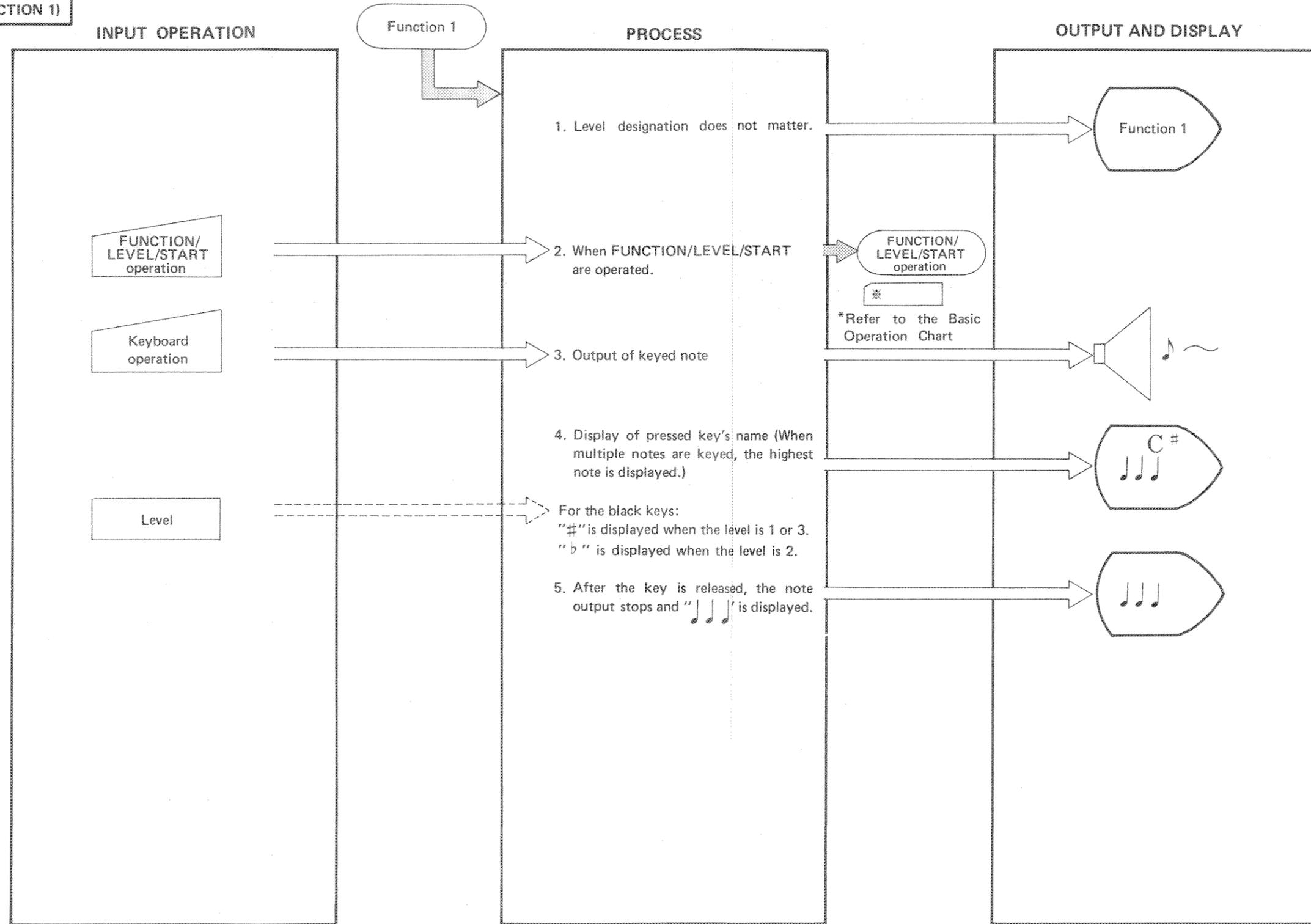


The microcomputer processes based on the input operation and response output can be obtained.

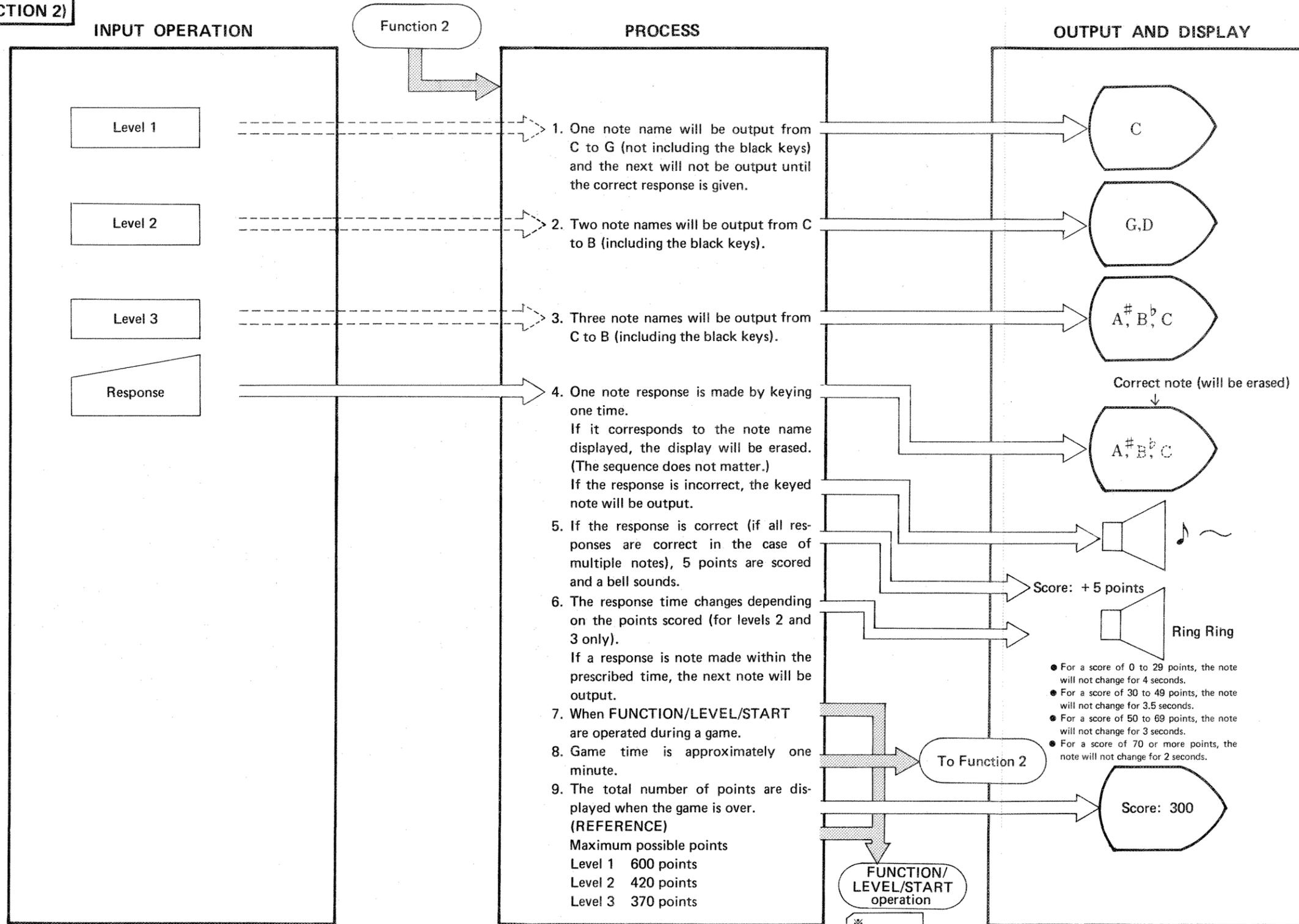
- Chart title
- Indicates that there is an input operation.
- Shows the display contents prior to the input operation.
- Displays the results that were processed by the microcomputer using the input operation.
- Indicates a judgement.
- A B Indicates B occurs as a result of A.
- A B Indicates movement passes from A to B.
- A B Indicates B is processed based on A.



KEYED NOTE
NAME DISPLAY
(FUNCTION 1)

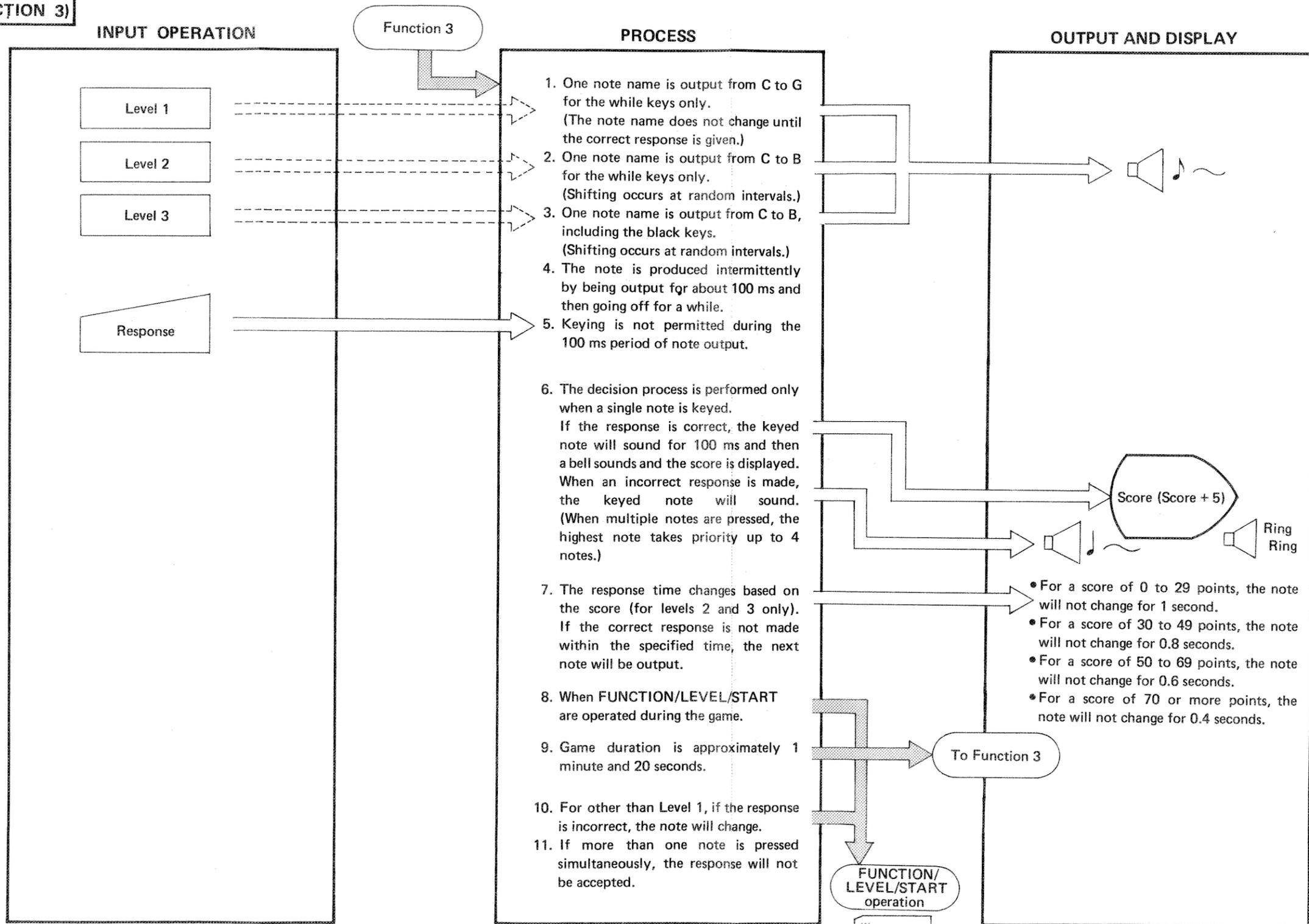


NOTE NAME GUESSING (FUNCTION 2)

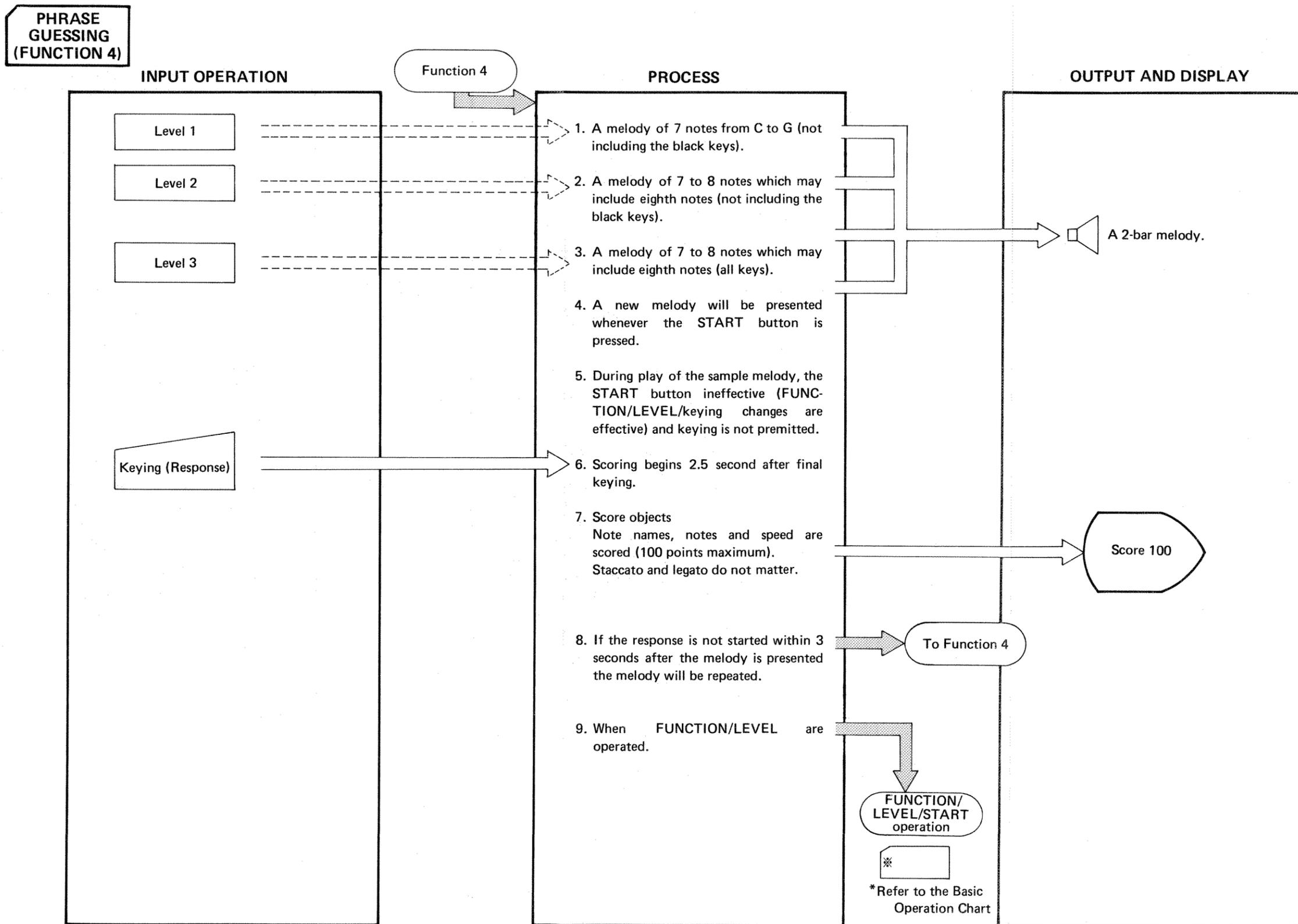


*Refer to the Basic Operation Chart

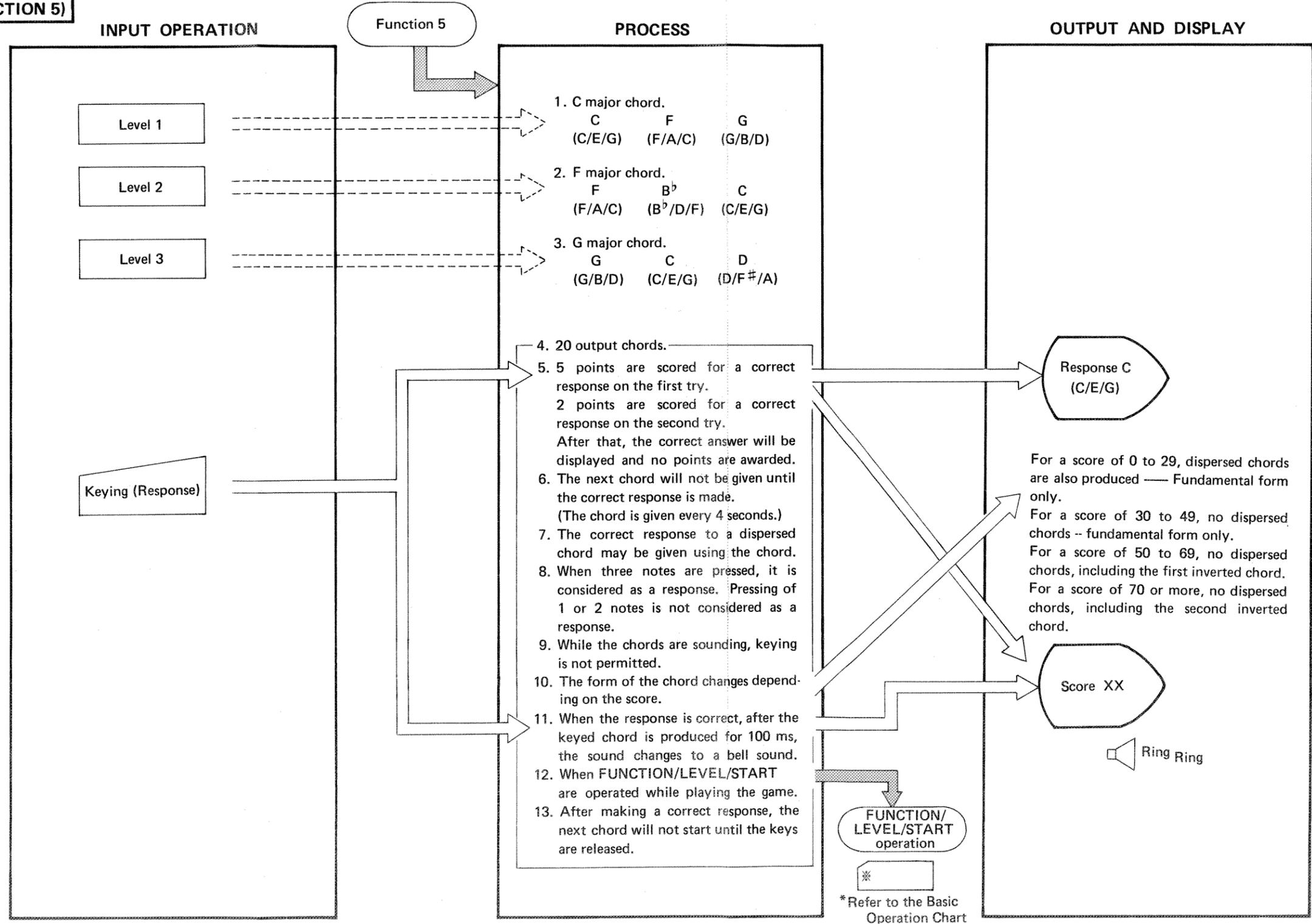
NOTE GUESSING (FUNCTION 3)

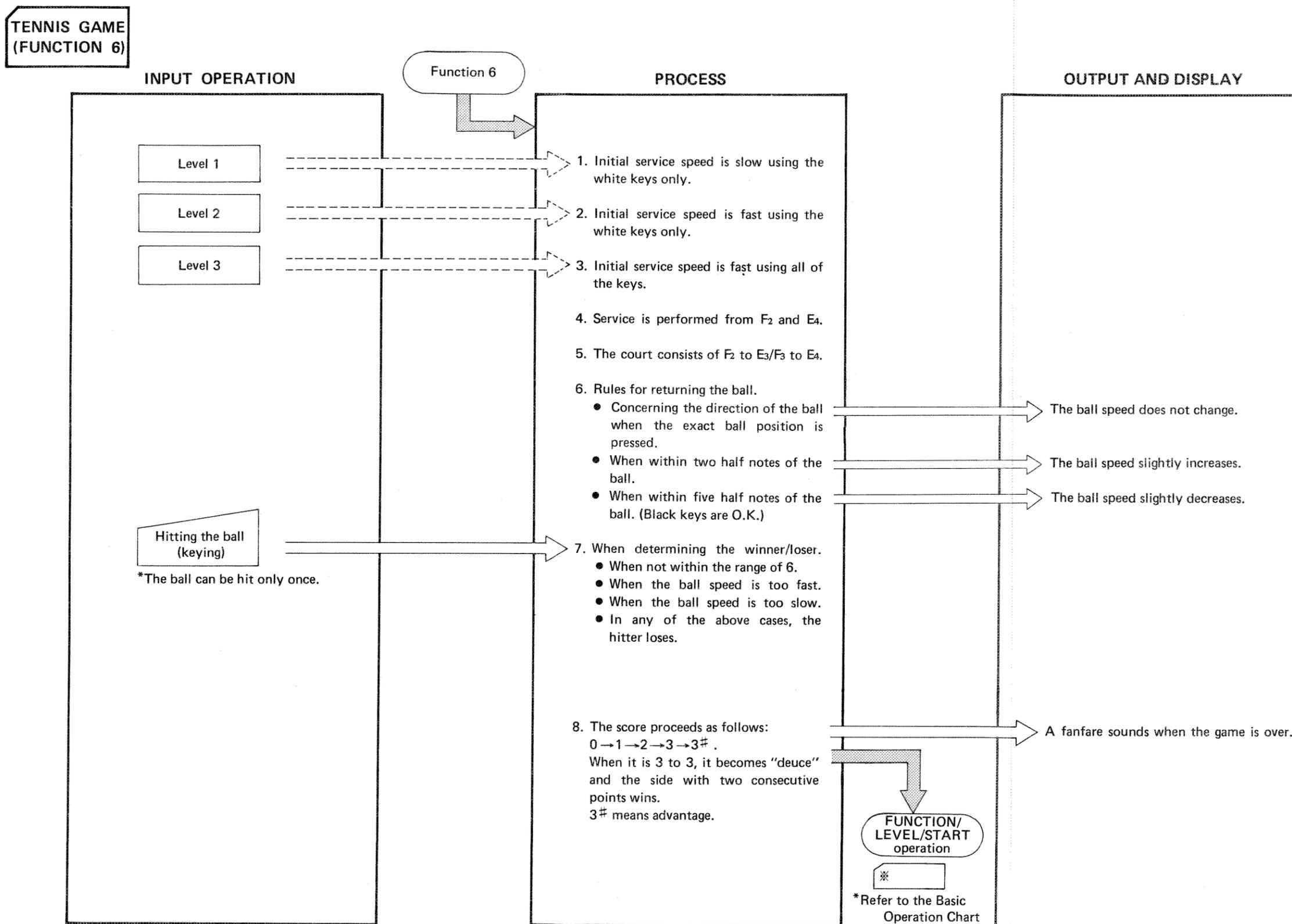


*Refer to the Basic Operation Chart



CHORD GUESSING (FUNCTION 5)



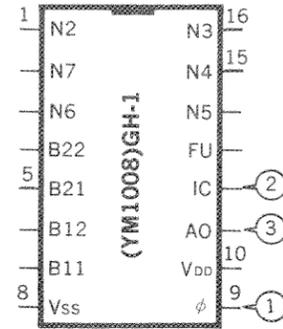


Note) The ball means a note gliding on the keyboard.

(HS-200)

Part Name	YM1008	Function Name	GH-1(Generator, Handy Sound-1)
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Pin			Pin		
No.	Name	Description	No.	Name	Description
1	N2	Note terminal, C [#] ,G	16	N3	Note terminal, D, G [#]
2	N7	Note terminal, C, F [#]	15	N4	Note terminal, D [#] ,A
3	N6	Note terminal, B, F	14	N5	Note terminal, E, A [#]
4	B22	Block terminal, B ₃ ~E ₄	13	FU	※Function terminal
5	B21	Block terminal, F ₃ ~A ₃ [#]	12	IC	Initial Clear Signal IN
6	B12	Block terminal, B ₂ ~E ₃	11	AO	Sound Source Signal OUT
7	B11	Block terminal, F ₂ ~A ₂ [#]	10	V _{DD}	DC Supply IN
8	V _{SS}	DC Supply IN (+7.5V)	9	φ	Master Clock Pulse IN(343.35KHz)



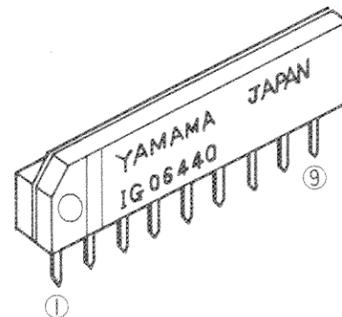
※ Function terminal:for Tone Selection, SUSTAIN and F₄ note terminal

○ Number:Refer to Waveform photo graphs in this manual.

(HS-200·HS-500)

Part Name	iG06440	Function Name	Auto Power Off Control
-----------	----------------	---------------	-------------------------------

Pin		Description
No.	Name	
1		Primary DC Supply IN(positive)
2		Secondary DC Supply OUT
3		Power Switch ON/OFF Control IN
4		Start up Capacitor connection terminal
5		Primary DC Supply IN(Negative)
6		Auto Power OFF timing Setting
7		Control Signal Sensitivity Adjustment IN
8		Control Signal IN
9		Power Switch ON/OFF,Timer Reset control



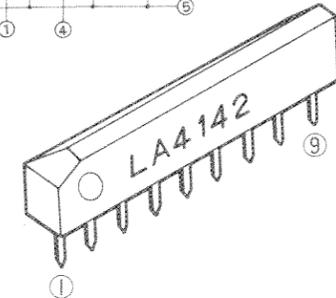
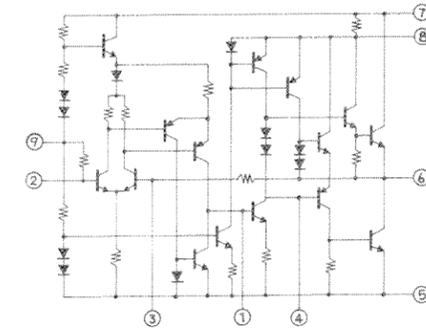
LSI Data Table

(HS-200·HS-500)

Part Name	iG0606 (LA4142)	Function Name	Power Amplifier
-----------	------------------------	---------------	------------------------

Pin		Description
No.	Name	
1		Capacitor Connection for Priventing oscillation
2		Audio Signal IN
3		Gain Control
4		Capacitor Connection for Priventing oscillation
5		DC Supply IN(V _{CC})
6		Audio Signal OUT
7		DC Supply IN(V _{EE})
8		Bootstrap Capacitor Connection
9		Decoupling Capacitor Connection

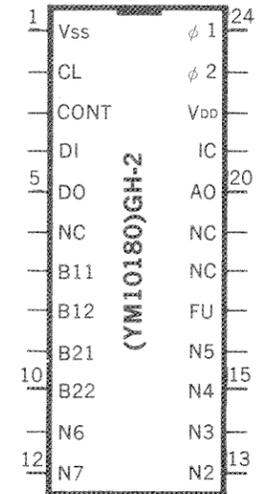
· LA 4142 Fquivalent circuit diagram



(HS-500)

Part Name	YM10180	Function Name	GH-2(Generator, Handy Sound-2)
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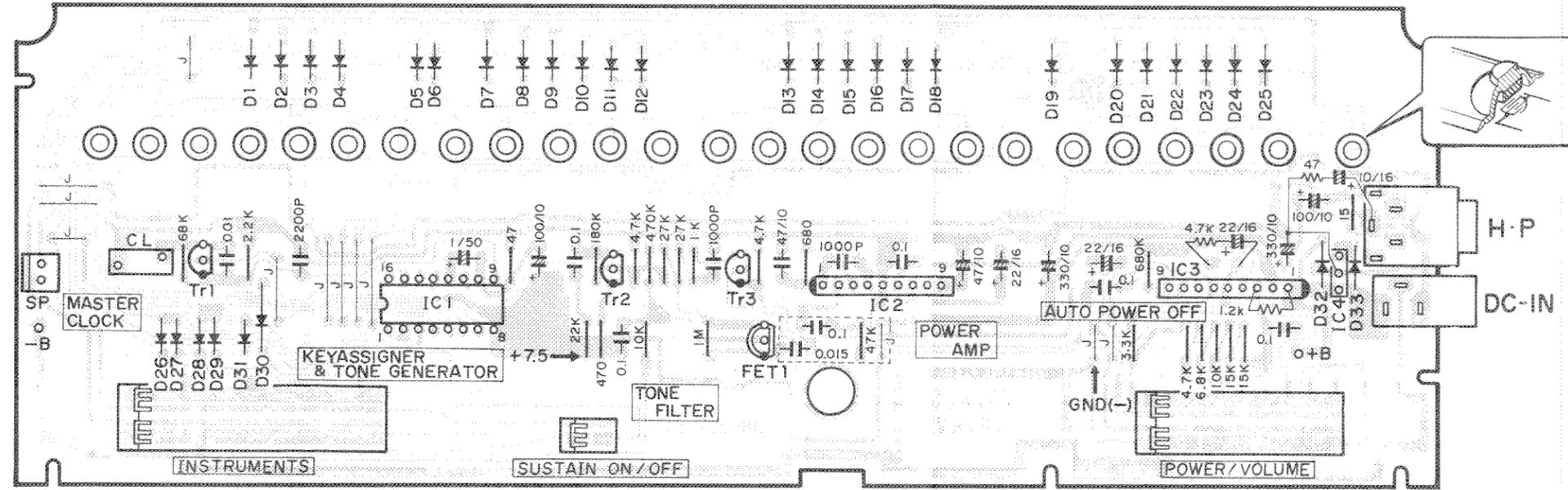
Pin		Description	Pin		Description
No.	Name		No.	Name	
1	V _{SS}	Primary DC Supply IN(+7.5V)	24	φ 1	Master Clock Pulse IN (343.35KHz)
2	CL	μCOM Clock Pulse IN	23	φ 2	No connection
3	CONT	Control data IN from μCOM	22	V _{DD}	Primary DC Supply IN(Ground)
4	DI	Data IN from μCOM	21	IC	Initial Clear Signal IN
5	DO	Data OUT to μCOM	20	AO	Sound Source Signal OUT
6	NC	NO Connection	19	NC	No connection
7	B11	Block terminal, F ₂ ~A ₂ [#]	18	NC	No connection
8	B12	Block terminal, B ₂ ~E ₃	17	FU	※ Function terminal
9	B21	Block terminal, F ₃ ~A ₃ [#]	16	N5	Note terminal, E, A [#]
10	B22	Block terminal, B ₃ ~E ₄	15	N4	Note terminal, D [#] , A
11	N6	Note terminal, B, F	14	N3	Note terminal, D, G [#]
12	N7	Note terminal, C, F [#]	13	N2	Note terminal, C [#] , G



※ Function terminal:for Tone Selection, SUSTAIN and F₄ note terminal

HS-200 HM1 Circuit Board

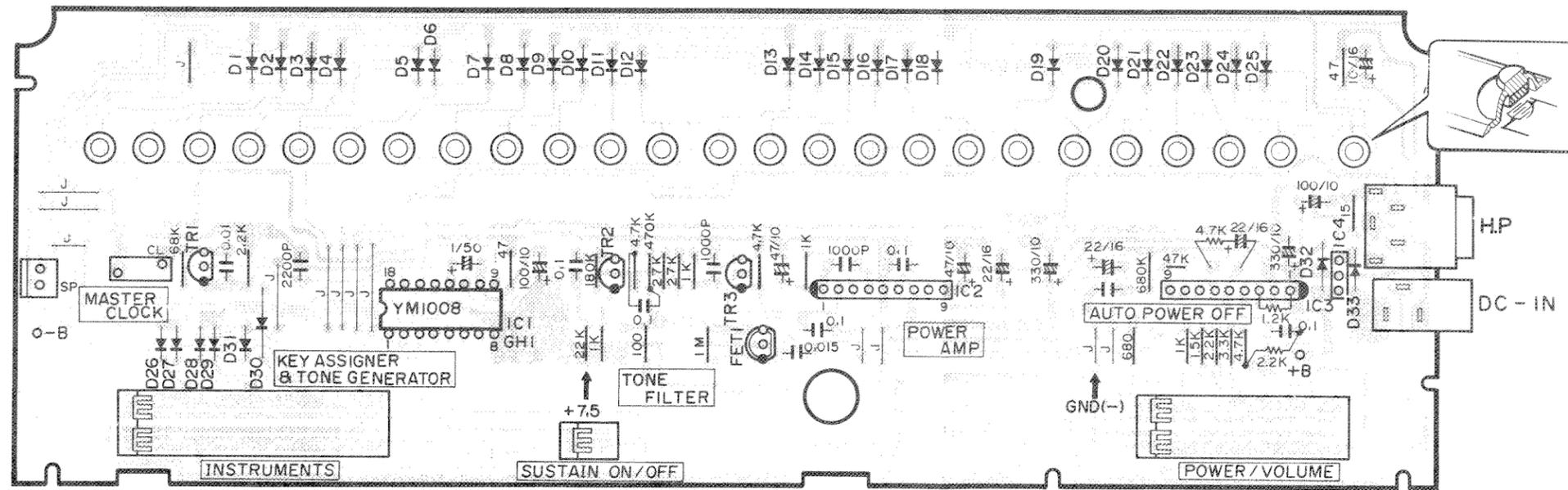
S/# 4001 ~ 4075



Component Side (部品側)

KEP-NA10803 - 1Y Δ

S/# 11076 ~

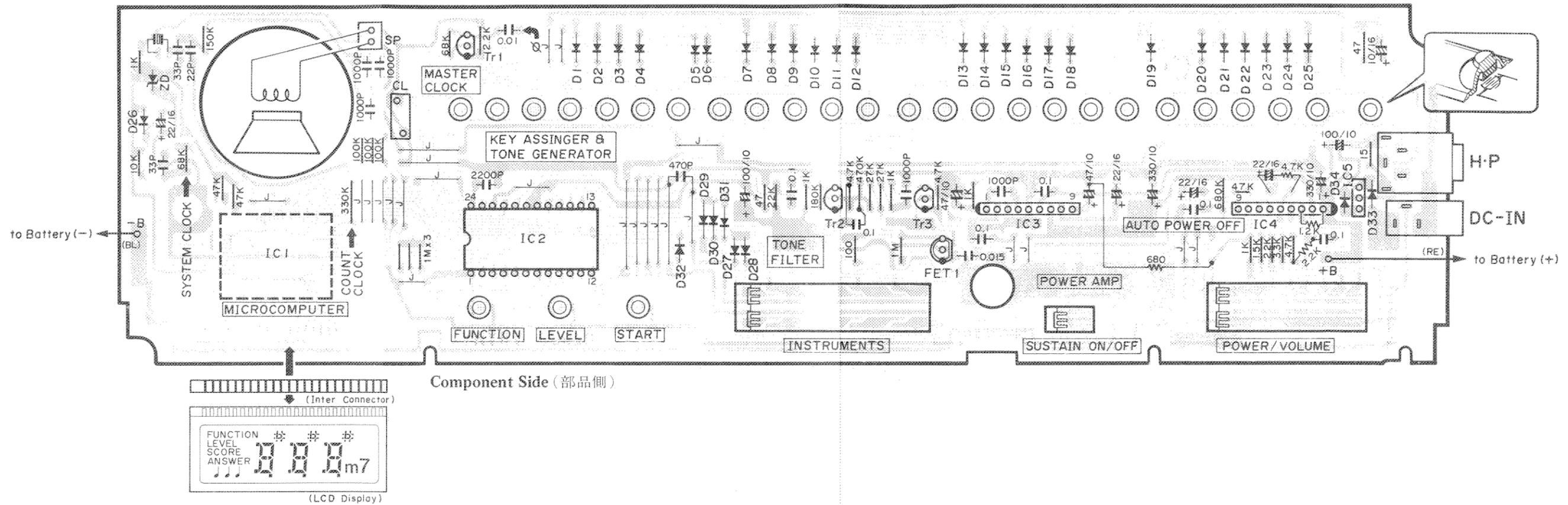


Component Side (部品側)

KEP-NA 10803-21

- (Note)
- | | |
|---------------------|-------------------------------|
| 1. LC28752 | : S/# 4001 ~ 4075 |
| LC28754 | : S/# 11076 ~ |
| 2. IC | |
| IC1 | : YM1008 |
| IC2 | : LA4142 |
| IC3 | : IG06440 |
| IC4 | : 78L008P |
| 3. Transistor | |
| Tr1, 3 | : 2SC1815 (O) (Y) |
| Tr2 | : 2SA733 (P) (Q) |
| 4. FET | |
| FET1 | : 2SK246 (Y) |
| 5. Diode | |
| D1 ~ 31 | : 1SS133 (Servicing : 1S1555) |
| D32, 33 | : 1SS84 |
| 6. Ceramic Vibrator | : 343.4 kHz |

HS-500 HM2 Circuit Board



(Note)

1. LC28761
2. IC
 - IC1 : μ PD7503G
 - IC2 : YM1018
 - IC3 : LA4142
 - IC4 : IG06440
 - IC5 : 78L008P
3. Transistor
 - Tr1.3 : 2SC1815 (O) (Y)
 - Tr2 : 2SA733 (P) (Q)
4. FET
 - FET1 : 2SK246 (Y)
5. Diode
 - D1 ~ 32 : 1SS133 (Servicing : 1S1555)
 - D 33, 34 : 1SS84
6. Ceramic Vibrator : 343.4 kHz
Quartz Vibrator : 32.768 kHz