

SERVICE MANUAL & PARTS LIST (without price)

LABEL PRINTER KL-200E_(ZX-251B)

SEP 1999



KL-200E

CASIO®

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1. SPECIFICATIONS

1-1. KL-200E (main shipment - Germany)

Input

Keyboard Layout: Typewriter (QWERTY)

Character Types

Alpha: 59
Numbers: 10
Symbols: 50

Display

Type: Liquid crystal display
Character matrix: 12 columns of 5 × 7-dot

Printing

Type: Thermal transfer
Speed: Approximately 6.76 mm/second
Width: 4mm (6mm tape), 7mm (9mm tape), 10mm (12mm tape), 12mm (18mm and 24mm tapes)
Character matrix: 48 × 48-dot
Character fonts: Grotesque bold
Character effects: Shade, underline, box
Character styles: Normal, Outline, Shadow, Raised
Character sizes: 1 × 1, 1 × 2, 1 × 3, 1 × 4, 1 × 5, 1 × 6, 2 × 1, 2 × 2, 2 × 3, 2 × 4, 2 × 5, 2 × 6, 3 × 1, 3 × 2, 3 × 3, 3 × 4, 3 × 5, 3 × 6, 4 × 1, 4 × 2, 4 × 3, 4 × 4, 4 × 5, 4 × 6
Number of lines: 1 (6 mm and 9mm tapes); 1 or 2 (12mm tape); 1 or 2 or 3 (18mm and 24mm tapes)

Memory

Text: Up to approximately 95 characters

General

Power supply: Six AA-size alkaline batteries or optional AD-A95100 AC adaptor
Battery life: Approximately 2 tape cartridges (continuous printing)
Power consumption: 9 W
Auto power off: Approximately six minutes after last key operation.
Dimensions: 53.5 (H) × 190 (W) × 211 (D) mm
Weight: Approximately 510g
Ambient temperature: 10° C ~ 35° C (50° F ~ 95° F)

Threshold of voltage detection

Low battery: Vbat+ = (6.3 ~ 6.6) V
Forced power off: Vbat+ = 4.50V

Note: Vbat+ is the voltage of BT+ battery terminal pad on PCB ASS'Y/MAIN. Refer to 9 page.

2. CLEANING THE PRINTER HEAD AND ROLLER

A dirty printer head and roller can result in poor printing quality. If you have problems with print quality, use the following procedure to clean the printer head and roller.

To clean the printer head and roller

1. Make sure the Label Printer is turned off.
2. Turn over the Label Printer, and open the back cover while pressing down on its lock.
3. Remove the tape cartridge.
4. Use a cotton swab dipped in alcohol to clean the printer head and roller as shown in the illustration (Figure-1).

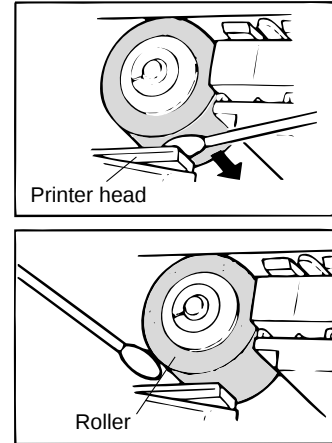


Figure-1

5. Replace the tape cartridge and close the back cover.

3. RESET OPERATION

1. Make sure that Label Printer power is off.
2. While holding down the **DRUCK** and **ESC** keys, press **EIN/AUS** to turn power on.
 - And then, keeping **DRUCK** and **ESC** held down, release the **EIN/AUS** key only.
3. Release **ESC**, and then **DRUCK** keys.
4. Press **SET** to initialize the Label Printer or **ESC** to abort the reset operation without initializing anything.
 - The following table shows the initial settings.

INITIAL?

ITEM	Reset
Display	Cleared
Memory	Cleared
SYMBOL	,
SIZE	AUTO
EFFECT	CANCEL
STYLE	NORMAL
M-FEED	NO
MIRROR	OFF
MEMO	STORE
DENSITY	3
CONTRAST	Level 16

4. PRECAUTIONS

To prevent damage of the thermal head caused by static electricity when assembling CHASSIS ASS'Y into the unit, the following steps must be followed;

1. Turn the power switch off.
2. Discharge the capacitor C2 (2200 μ F) on PCB ASS'Y/MAIN (Z251-1).
3. Connect the FPC of CHASSIS ASS'Y into a connector CN202 shown to the right.
4. Assemble CHASSIS ASS'Y.
5. Turn the power switch on.
Refer to the Disassembly view PCB ASS'Y/MAIN of 15 page.

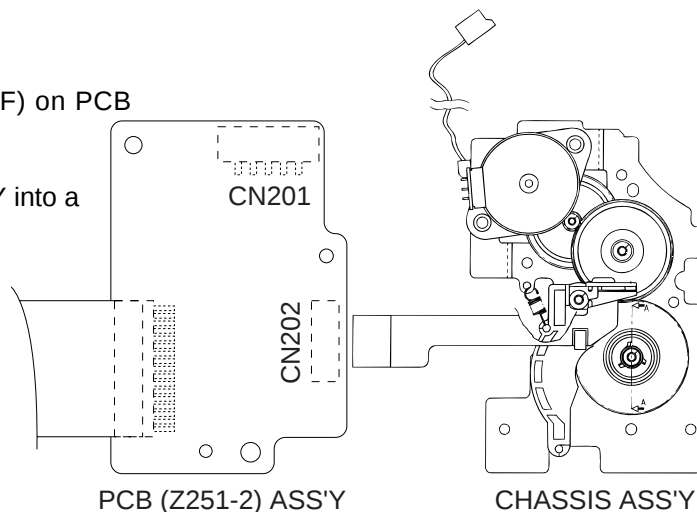


Figure-2

5. MEASUREMENT

Measure each value according to the following table and figure, if necessary.

Measurement point		Voltage/Current	Condition
Iadp+ (Displaying)	Typ.	16 mA	Turning power switch on.
	Max.	22 mA	When displaying at diagnostic program.
Iadp+ (Printing)	Typ.	0.4 A	When printing at diagnostic program PRINT CHECK 1
	Max.	0.6 A	
Iadp+ (Power off)	Typ.	5 μ A	Turning power switch off.
	Max.	10 μ A	

Note: Iadp+ = Power source (Adaptor)
Vadp+ = 9.5 V $\pm$ 0.1 V

Table-2

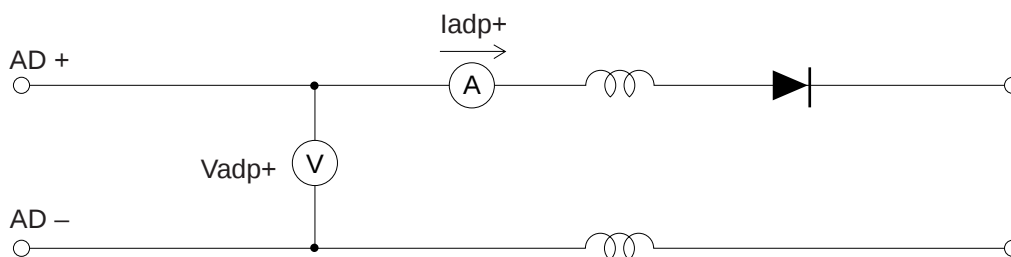
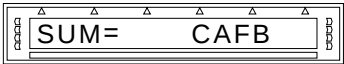
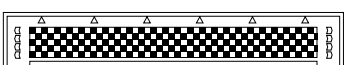
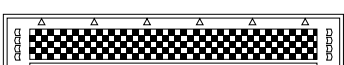
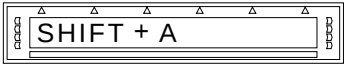
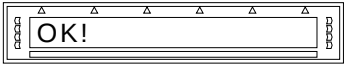
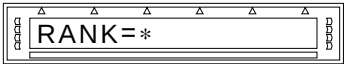
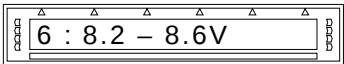


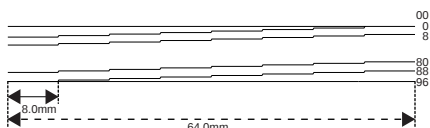
Figure-3

6. DIAGNOSTIC PROGRAM

Note: Perform **RESET** operation after ROM check, because the ROM check elases the data stored in RAM.

Check item	Operation	Display	Note
(BOOT)	Press (EIN/AUS) key while pressing keys (Y + P + ZURÜCK) at the same time.		
	Select arrow (↑) , (↓) keys to navigate between the test mode choices.	1. [TEST ALL] 2. [LCD CHECK] 3. [KEY CHECK] 4. [HEAD RANK] 5. [TAPE CHECK] 6. [VOLT CHECK] 7. [ROM CHECK] 8. [PRN1 CHECK] 9. [PRN2 CHECK]	
	Press 'SET' at [TEST ALL] mode.	ONLY THE FOLLOWING WILL BE TESTED : 1. [ROM CHECK] 2. [LCD CHECK] 3. [KEY CHECK] 4. [RANK CHECK] 5. [PRN1 CHECK]	
	[TEST ALL] Mode :	For example, 	Start with [ROM CHECK].
	Press 'SET' at all test modes appear. For key check, enter the respective keys as displayed.		Check LCD, KEY, RANK and VOLT-AGE TEST.
			PRN1 CHECK. Wait for printing ends.
	Display returns to test mode menu.		Return to [TEST ALL] mode.
LCD CHECK	Press (↓) key to select [LCD CHECK] mode. Press 'SET'.		
	Press 'SET'.		
	Press 'SET'.		
	Press 'SET'.		
	Press 'SET' to return to test mode menu.		

Check item	Operation	Display	Note
KEY CHECK	Press 'SET'.		
	Press respective keys appear on LCD.		Press the keys according to LCD display.
	Press respective keys appear on LCD.	↓	ALL KEYS CHECK.
	Depress 'UMS' key and press 'A'.		
	Press 'SET' to return to test mode menu.		
HEAD RANK CHECK	Press 'SET'.		
	Press 'SET' to return to test mode menu.		
TAPE CHECK	Press 'SET'.		
	Press 'SET' to return to test mode menu.		Tape size range from [6mm], [9mm], [12mm], [18mm] and [24mm].
VOLTAGE CHECK	Press 'SET'.		
	Press 'SET' to return to test mode menu.	Display should show one of following : [0 : - 6.2V] [4 : 8.0 - 8.6V] [1 : 6.3 - 6.6V] [5 : 8.7 - 9.4V] [2 : 6.7 - 7.2V] [6 : 9.5 - 10.2V] [3 : 7.3 - 7.9V] [7 : 10.3 - V] Example of volt check display : 	

Check item	Operation	Display	Note
ROM CHECK	Press 'SET'.		
	Press 'SET' to return to test mode menu.	For example, 	
PRN1 CHECK	Press arrow key.		
			Tape sizes for this PRN1 test must be in [18mm] or [23mm]. otherwise 'TAPE ERROR' will appear.
			Wait until printing ends.
	↓ (DOWN)	PRN1 PRINTOUT : 	
PRN2 CHECK	Press 'SET'.		
	Press 'SET'.		Tape sizes for this PRN2 test must be in [18mm] or [23mm]. otherwise 'TAPE ERROR' will appear.
		 PRN2 PRINTOUT : 	Wait until printing ends.

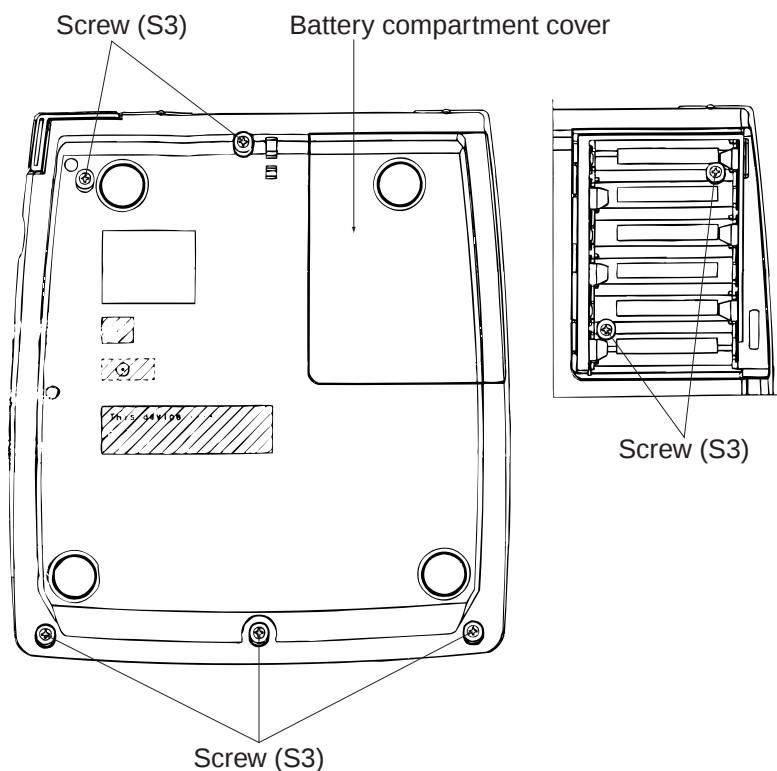
7. ERROR MESSAGES

KL-200E

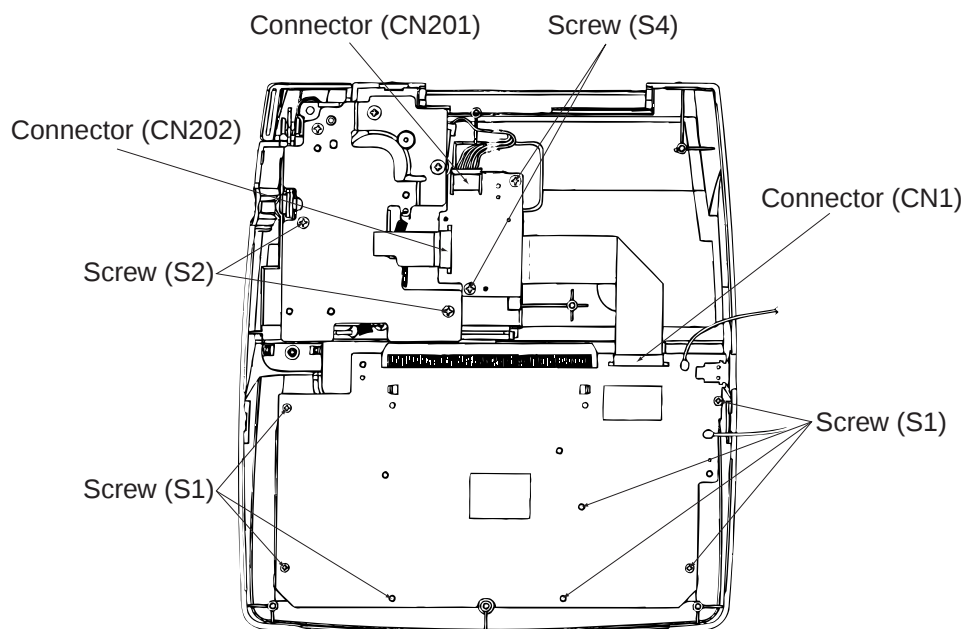
Message	Possible Cause	Action
 FEHLER! * This message appears on the screen for about one second.	The number carriage returns you input causes the label to exceed the maximum number of lines for the tape you are using.	Use wider tape or reduce the number of lines. 6mm tape...1 line 9mm tape...1 line 12mm tape...UP to 2 lines 18mm tape...UP to 3 lines 24mm tape...UP to 3 lines
KEINE DATEN * This message appears on the screen for about one second.	You are attempting to recall text from memory when there is none stored.	
ÜBERSCHR.?	You are attempting to store text in memory when it already contains text.	Press SET to overwrite the existing text with the new text, or ESC to cancel the store operation.
BANDFEHLER!	- You are attempting to print a stamp using a tape size other than 18mm. - You are attempting to perform printing without setting a tape cartridge. - You are attempting to perform a currency conversion/bar code operation using a 6mm or 9mm tape.	Press any key besides EIN/AUS to clear the error message. - Use only 18mm tape to print a stamp. - Turn the power OFF and set the tape cartridge. - Use only 12, 18, or 24mm tapes to perform currency conversion/bar code operation.
STEMP. FEHL.! * This message appears on the screen for about one second.	- You are attempting to print a stamp with text that is longer than 5.5cm. - You are attempting to print a stamp while three lines of text are input.	- Shorten the text you are printing and try again. - Reduce the number of lines of text to two.
BAT. SCHWACH	Battery power is low.	Replace the batteries.
DATENFEHLER!	Data in memory has become corrupted for some reason.	Press any key besides EIN/AUS to clear the error message. In response to the "INITIAL?" message that appears, press SET to initialize the label Printer.
STELLENFEHL. * This message appears on the screen for about one second.	Input of the wrong number of digits for a bar code operation.	Input the correct number of digits for the type of bar code you are creating. EAN-8...7 digits EAN-13...12 digits

8. DISASSEMBLY PROCEDURE

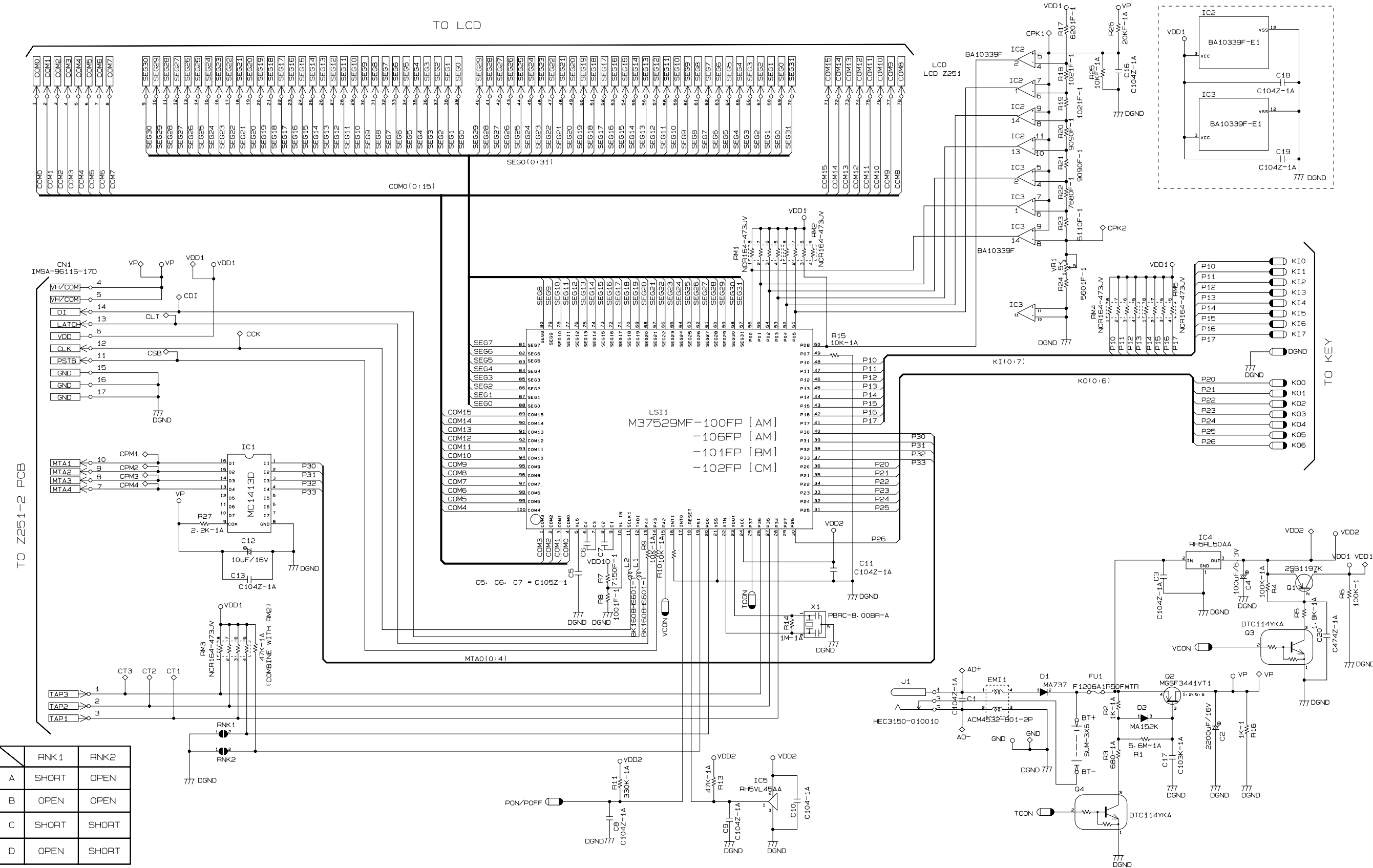
1. Remove the Battery compartment cover.
2. Remove 7 screws (S3), then separate upper case and lower case using a opener.



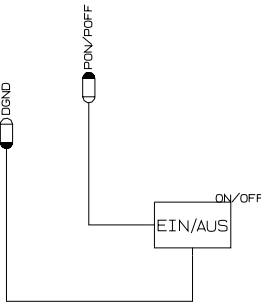
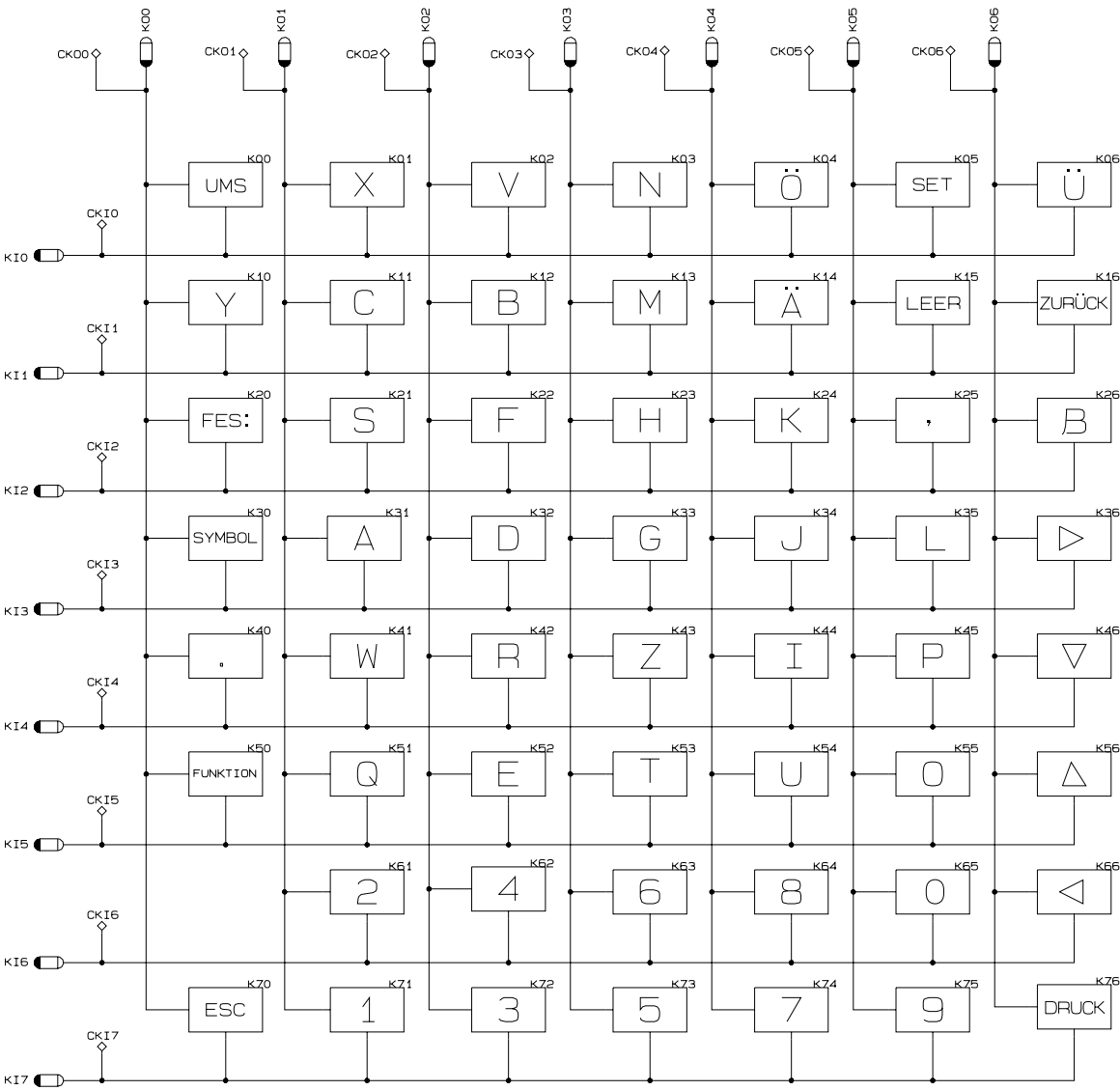
3. Remove 7 screws (S1), then remove PCB ASS'Y/MAIN (Z251-1).
4. Pull out the white flat cable from the connector (CN1).
5. Remove 2 screws (S4) and pull out the socket and FPC from the connector (CN201, CN202).
6. Remove 2 screws (S2) and remove cutter cradle, then remove CHASSIS ASS'Y.



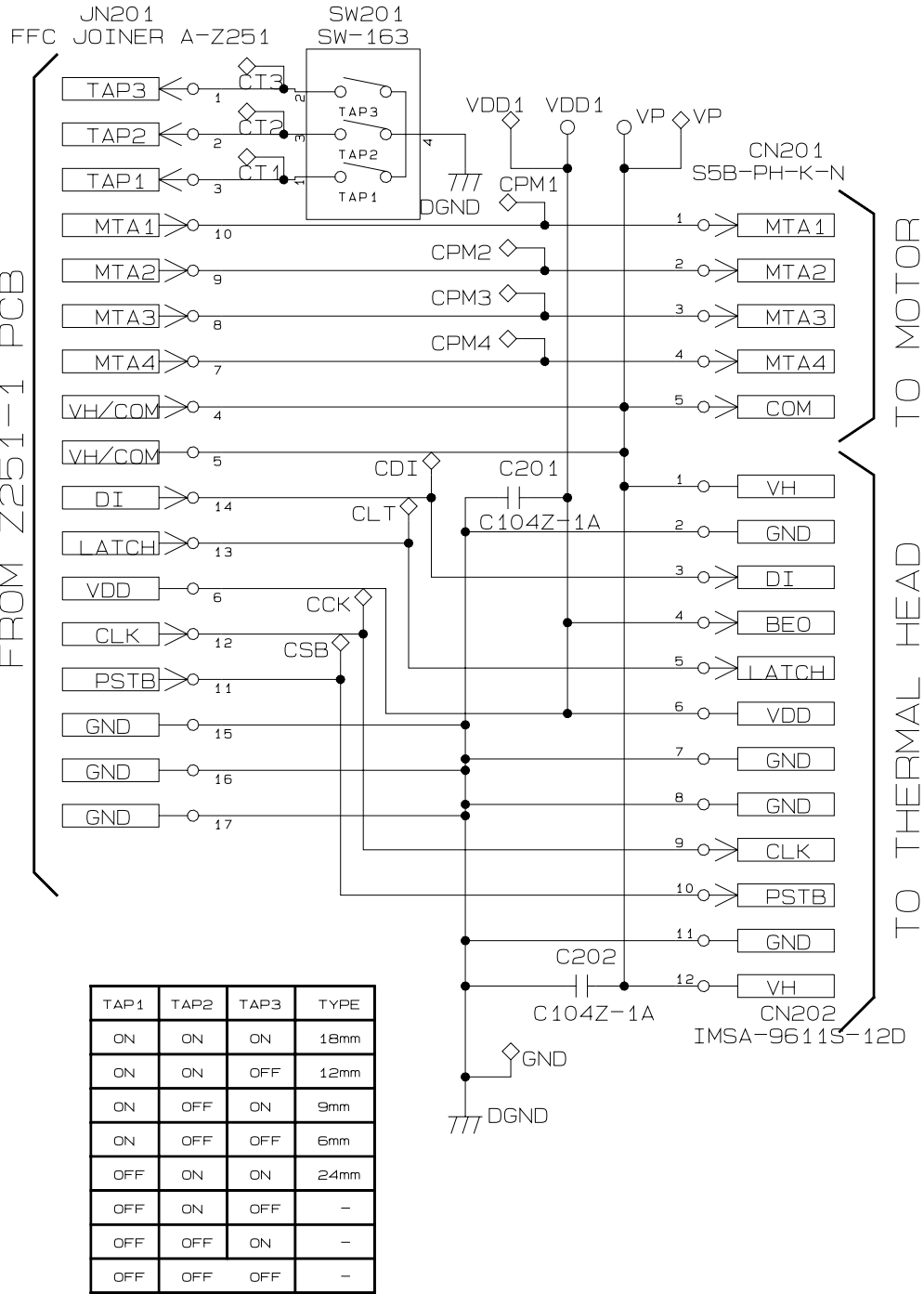
9. SCHEMATIC DIAGRAMS



Key block



Switch block (PCB (Z251-2) ASS'Y)



PATS PRICE LIST

KL-200E

10-1. COMPONENTS

N	Item	Code No.	Parts Name	Specification	Q	Price Code	R
PCB ASSY/MAIN (A141188)							
N	LSI1	2012 6597	LSI	M37529MF-101FP	1	BO	B
	IC1	2113 0343	IC/BIPOLAR	MC1413DR2	1	AF	C
	IC2,3	2114 3185	IC/LINEAR	BA10339F-E1	2	AD	C
	IC4	2105 2737	IC/MOS	RH5RL50AA-T1	1	AC	C
	IC5	2105 2667	IC/MOS	RH5VL45AA-T1	1	AC	C
	X1	2590 2806	OSCILLATOR/CERAMIC	PBRC-8.00BR-A	1	AC	C
	J1	3502 2233	JACK	HEC3150-010010	1	AF	C
	CN1	3502 2773	CONNECTOR	IMSA-9611S-17D	1	AE	C
	FU1	3632 0764	FUSE/CHIP	FUSE-42901.5	1	AD	B
	1	1000 1441	LCD	CD1184-TS	1	AA	B
	2	6426 4240	HOLDER	A241677-1	1	AA	B
	4	5610 9840	HEAT•@SEAL	A342931-1	1	AT	B
	5	6426 4260	TAPE	A444626-1	1	AA	C
PCB ASSY (A343041)							
	CN201	3502 2770	CONNECTOR	S5B-PH-K-N	1	AA	C
	CN202	3502 2772	CONNECTOR	IMSA-9611S-12Y901	1	AD	C
	JN201	3502 2771	CABLE/JOINT	FFC•@JOINER•@A-Z251	1	AF	C
	SW201	3110 6028	SWITCH/MICRO	SW-163	1	AH	C
COMPONENTS							
N	6	6426 3920	CAP	A443674-2	1	AN	C
	7	6426 3940	PLATE/DISPLAY	A241672-2	1	AN	B
	8	6426 3960	TAPE	A343021-1	1	AC	C
N	9	6426 3980	PLATE/CASSETTE	A241673-2	1	AM	C
	10	6426 4000	TAPE	A343022-1	1	AB	C
N	11	6426 4020	COVER/CASSETTE	A141181-2	1	AK	X
	12	6426 4040	COVER/BATTERY	A141182-1	1	AC	X
	13	6426 4050	PIN	A343035-1	1	AA	C
	14	1000 5459	SPRING	A444794-1	1	AA	C
	15	6426 4060	FOOT/RUBBER	A444531-1	4	AA	C
N	16	1000 1851	CASE/UPPER(ASSY)	A241792*2	1	CP	B
	17	6426 4110	BUTTON	A342967-1	1	AA	C
N	18	6426 4130	BUTTON	A342968-2	1	AB	C
	19	6426 4140	BUTTON	A241675-1	1	AA	C
	20	6426 4150	SPRING	A444447-1	1	AA	C
	21	6426 4160	RUBBER/KEY	A141238-1	1	AG	C
	22	6426 4170	SWITCH	A241676-1	1	AB	C
	23	6425 7950	SCISSORS•@ASSY	A343032*1	1	AU	C
N	24	6426 3850	PCB•@ASSY/MAIN	A141188*2 A	1	DL	B
	25	6413 4850	SCREW	A313841-5	7	AA	X
	26	6425 0150	SPRING	A342846-1	1	AA	C
	27	6426 3870	CHASSIS•@ASSY	A141186*1 A	1	DF	C

N	Item	Code No.	Parts Name	Specification	Q	Price Code	R
	28	6426 4180	BUTTON	A241674-1	1	AA	C
	29	1000 5453	SPRING	A444730-1	1	AA	C
	30	6426 3880	PCB•@ASSY	A343041*1 A	1	BI	B
	31	6410 2980	PIN	A414873-1	1	AB	C
	32	6426 4220	CASE/LOWER	A141180-1	1	AO	X
	33	6425 7970	SPRING/BATTERY	A444400-1	1	AB	X
	34	6425 7980	SPRING/BATTERY	A444401-1	1	AB	X
	35	6425 7990	SPRING/BATTERY	A444402-1	2	AA	X
	36	6425 8000	SPRING/BATTERY	A444403-1	3	AA	X
	37	1000 5462	SPACER	A444786-1	1	AB	X
	Parts Prices will be informed separately by Parts Price List.						

Notes: **N**-New parts

Q-Quantity used per unit

R-Rank

R- A:Essential

B:Stock recommended

C:Others

X:No stock recommended

N	Item	Code No.	Parts Name	Specification	Q	Price Code	R
10-2. CHASSIS ASSY							
CHASSIS ASSY (A141186)							
•@	101	6425 0000	CHASSIS ASSY/SUB	A241545*1	1	AQ	,b
	102	6410 2770	GEAR	A313765-1	1	AB	X
	103	6405 2740	PLATE/CLUCH	A312770-1	1	AA	X
	104	6405 2720	REEL TOP	A312763-1	1	AA	X
	105	6400 9710	FELT	A412350-1	1	AA	X
	106	6400 9720	WASHER	A412351-1	1	AA	X
	107	6400 9730	SPRING/CLUCH	A412352-1	1	AA	X
	108	6425 7960	HEAD/ARM	A241555-2	1	AD	X
	109	6410 2580	GEAR	A313761-1	1	AA	X
	110	6425 0120	PLATEN	A342775-1	1	AH	X
	111	6400 9780	SPRING/HEAD	A412366-1	1	AA	X
	112	6405 2850	TAPE	A413501-1	1	AA	X
	113	6400 9750	WASHER	A412353-2	3	AA	X
	114	6400 9760	WASHER	A412353-3	1	AA	X
	115	3122 3724	PRINT HEAD/THERMAL	KSH96BAF-CA	1	BS	,a
	116	3222 0049	MOTOR/STEPPING	27S1N18ECNU	1	BB	X
	117	6426 4250	HOLDER	A241678-1	1	AB	X
Parts Prices will be informed separately by Parts Price List.							

Notes: N-New parts

Q-Quantity used per unit

R-Rank

R- A:Essential

B:Stock recommended

C:Others

X:No stock recommended

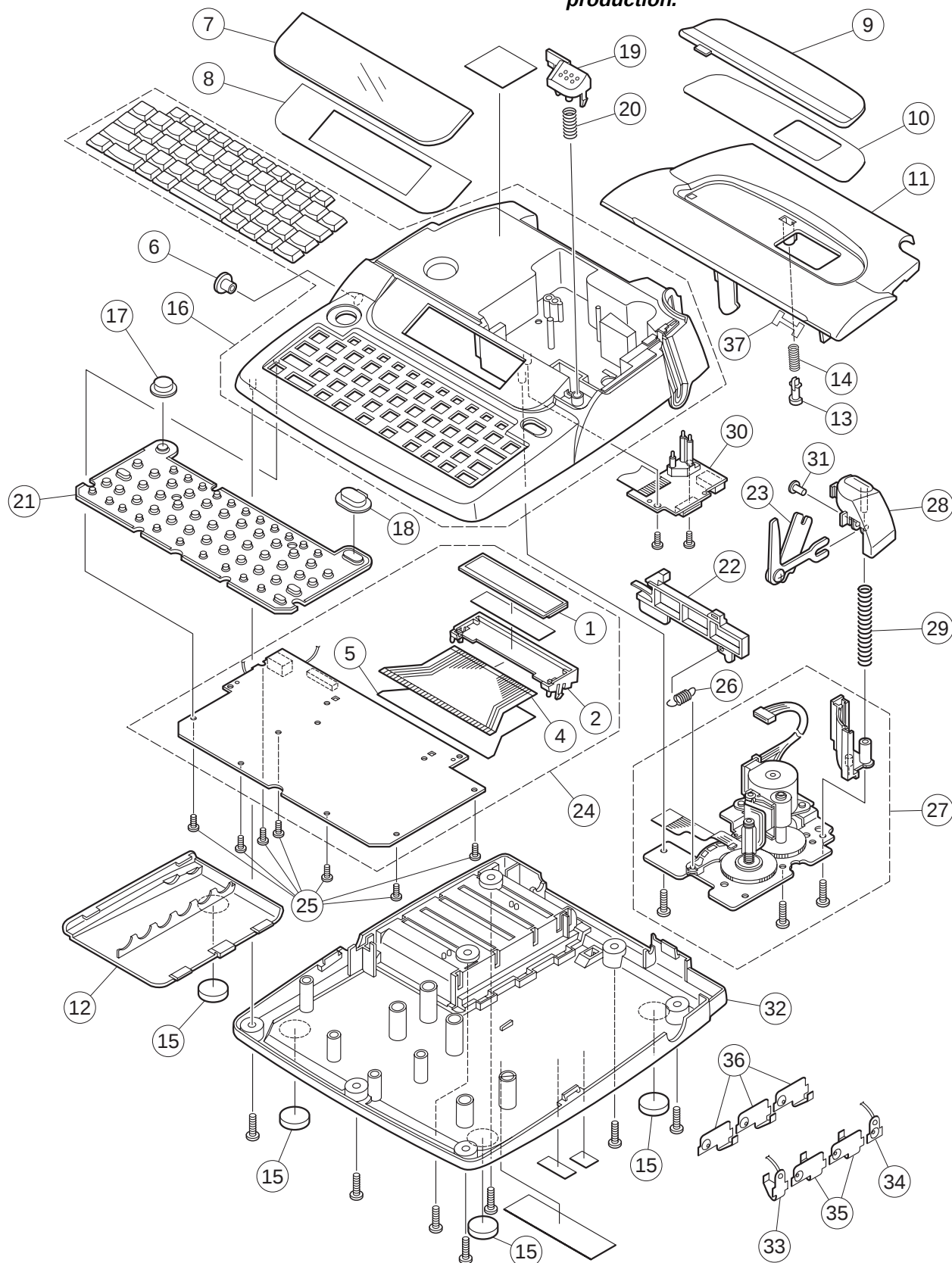
11. DISASSEMBLY VIEW

11-1-1. EXPLODED VIEW (COMPONENTS)

REMARK:

The part of item 16 contains keys and a upper case as shown below.

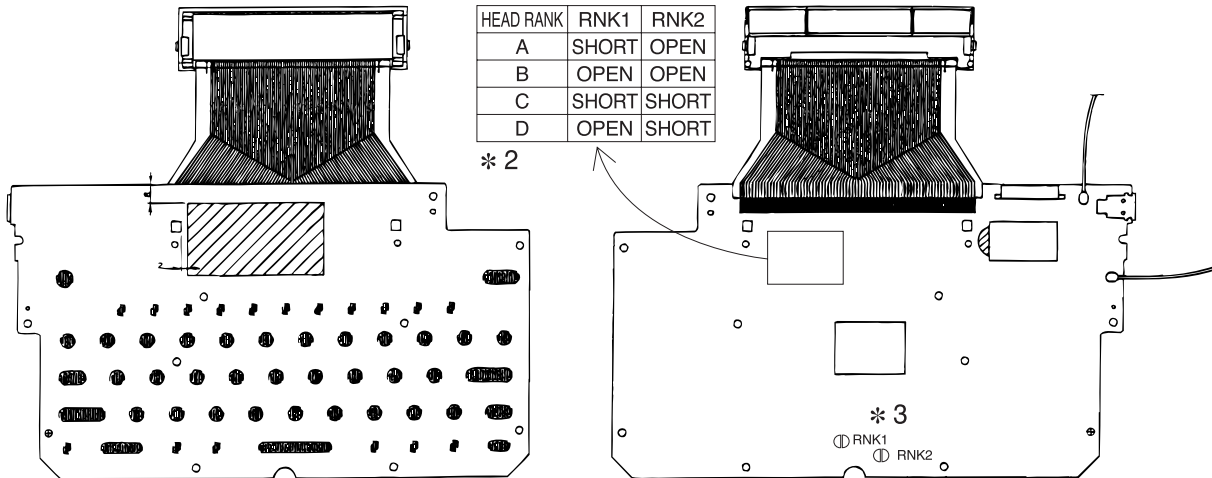
But, these parts can not be separately supplied for reasons of the assembling on production.



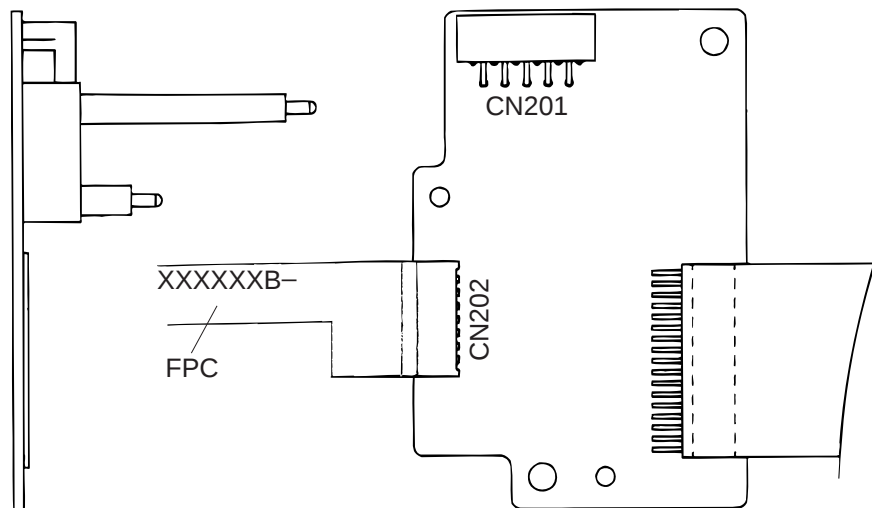
11-1-2. DISASSEMBLY VIEW (PCB ASS'Y/MAIN (Z251-1))

Note-1: Setting the thermal head rank

Set the thermal head rank with pads RNK1 and RNK2 (*3) referring to the table on PCB ASS'Y/MAIN (Z251-1) (*2) when replacing CHASSIS ASS'Y or thermal head.
The head rank is indicated on FPC (*1).

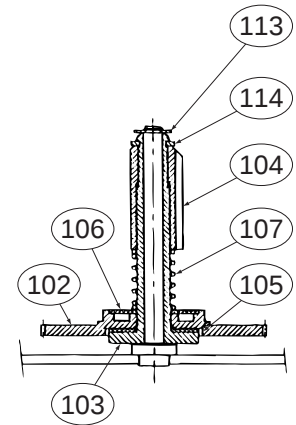
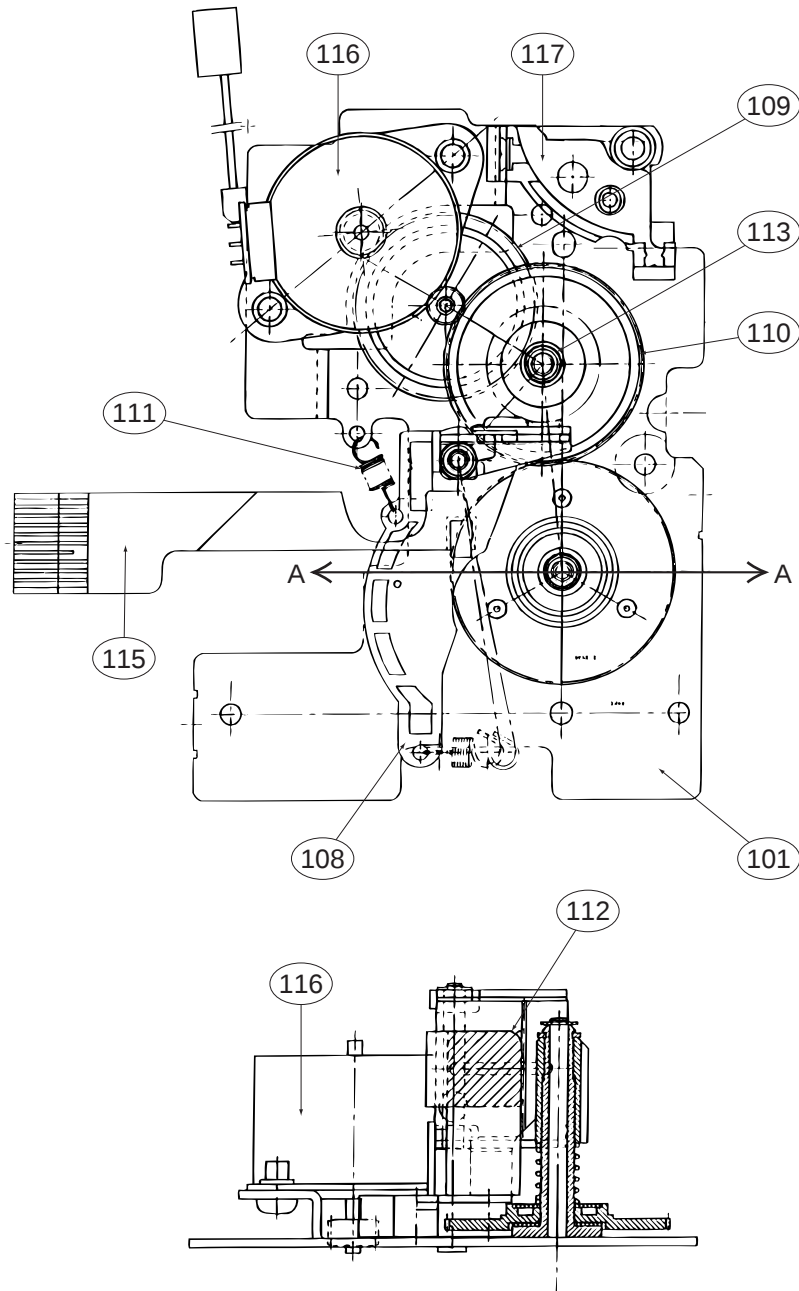


11-1-3. DISASSEMBLY VIEW (PCB (Z251-2) ASS'Y)



* 1 For example, XXXXXXB-
Head rank = B

11-2-1. Disassembly view (CHASSIS ASS'Y)



CROSS SECTION A-A

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