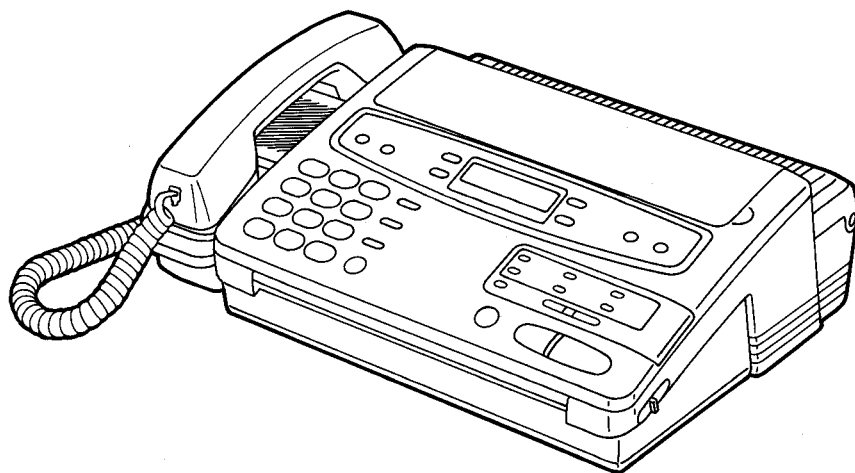


Service Manual

and Technical Guide



PERSONAL FACSIMILE
KX-F750
(for U.S.A.)

SPECIFICATIONS\ТЕХНИЧЕСКИЕ ХАРАКТЕРИСТИКИ

TROUBLESHOOTING GUIDE\НЕИСПРАВНОСТИ И МЕТОДЫ ИХ УСТРАНЕНИЯ

DISASSEMBLY INSTRUCTIONS\ИНСТРУКЦИЯ ПО РАЗБОРКЕ

ADJUSTMENTS\РЕГУЛИРОВКИ

CIRCUIT OPERATIONS\ПОЯСНЕНИЕ РАБОТЫ СХЕМ

SCHEMATIC DIAGRAM\ПРИНЦИПИАЛЬНЫЕ СХЕМЫ

**TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES\ЦОКОЛЕВКА ИНТЕГРАЛЬНЫХ СХЕМ,
ТРАНЗИСТОРОВ И ДИОДОВ**

CONNECTION DIAGRAM\ДИАГРАММА СОЕДИНЕНИЙ

**CABINET, MECHANICAL AND ELECTRICAL PARTS LOCATION\РАСПОЛОЖЕНИЕ МЕХАНИЧЕСКИХ И
ЭЛЕКТРИЧЕСКИХ ЧАСТЕЙ**

ACCESSORIES AND PACKING MATERIALS\ПРИНАДЛЕЖНОСТИ И УПАКОВОЧНЫЕ МАТЕРИАЛЫ

TOOLS\ИНСТРУМЕНТЫ

REPLACEMENT PARTS LIST\СПИСОК ЗАПАСНЫХ ЧАСТЕЙ

Panasonic

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SPECIFICATIONS

This specifications is for U.S.A. version only.
Refer to the simplified manual (cover) for other areas.

1. Integrated Telephone System (ITS) Section

Type: K type handset, Single line ITS
Push button type 12 key dial pad

Function: Speaker Phone (Electric Volume type, 8-level)
10 stations one-touch dialer (30 digits)
Auto redial
Electronic telephone directory
Combination dialing
22 speed dialer
Ringer control [3-steps (H, L, Off) control type]
Pulse dialing or DTMF (Tone) Dialing
Handset Receiver Volume (3-level control type)

2. Automatic Telephone Answering System (ATAS) Section

Type: All digital answering machine Dry battery (UM-3×4) Backup
ANS/FAX OGM, TEL/FAX OGM OGM, ICM total 15 min.

Function: DTMF tone remote control Call counter (Remote listening)
Remote turn on Operation selectable 3 digits ID code
Message memo (Remote record/playback type) CPC control
2 way record TEL, FAX, TEL/FAX, ANS/FAX selector

3. Facsimile Section

Type: Desk top

Applicable Lines: Public switched telephone network

Compatibility: ITU-T G3

Document Size: MAX. 216 mm (8½") in width, MAX. 600 mm (23⅝") in length

Effective Scanning Width: MAX. 208 mm (8⅜")

Printing Paper Size: 216 mm (letter)×30 m roll (8½"×98 ft roll), 216 mm (letter)×50 m roll (8½"×164 ft roll)

Effective Printing Width: 208 mm (8⅜")

Transmission Time*: Approx. 30 sec/page (G3 Normal mode)
Approx. 15 sec/page (Original mode)

Scanning Density: Horizontal 8 pels/mm (203 pels/inch)
Vertical 3.85 lines/mm (98 lines/inch)—Standard
7.7 lines/mm (196 lines/inch)—Fine
15.4 lines/mm (392 lines/inch)—Superfine

Image Sensor Type: CCD image sensor

Printer Type: Thermal printer

Data Compression System: Modified Huffman (MH), Modified Read (MR)

Modem Speed: 9600/7200/4800/2400 bps; Automatic fallback

Function: 10 stations automatic transmission, Delayed Transmission
Automatic document feeder (Max. 15 page), Polling, Polled
Copy function, Silentfax Receiving,
Remote Fax Receiving, Paper Cutter, Junk Mail Prohibitor
Paper curl reduction, HELP function

4. General

Power Supply: AC 120 V, 60 Hz

Power Consumption: 1 Battery 3 V (Lithium Battery)...For Memory Backup and Real Time Clock Backup
4 Battery 1.5 V×4 (Dry Battery)...for ICM and OGM Backup
Transmission: Approx. 15 W
Reception: Approx. 35 W
Copy: Approx. 40 W
Standby: Approx. 5 W
Maximum: Approx. 100 W

LCD: 15×1 line

Speaker: 5 cm (1⅓") PM dynamic

Microphone: Condensor microphone (for SP-Phone)

Dimensions (H×W×D): 122×362×287 mm (4⅓×14⅛×11⅝)

Weight: 3.9 kg (8 lb. 9.6 oz)

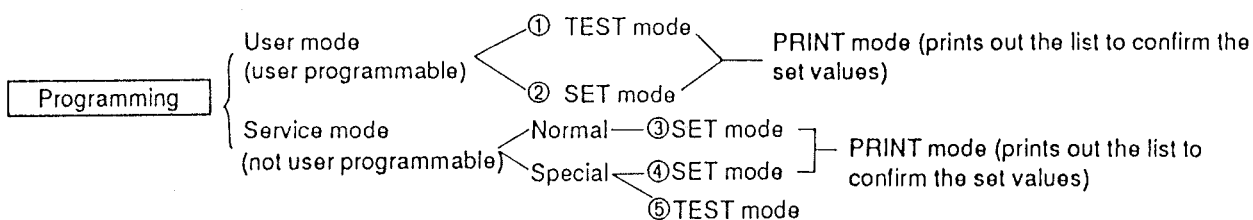
1. PROGRAMMING

The programming functions are used to program the various features and functions of the machine, and to test the machine. Programming can be done in both the on-hook and off-hook conditions. This facilitates communication between the user and the servicer while programming the machine.

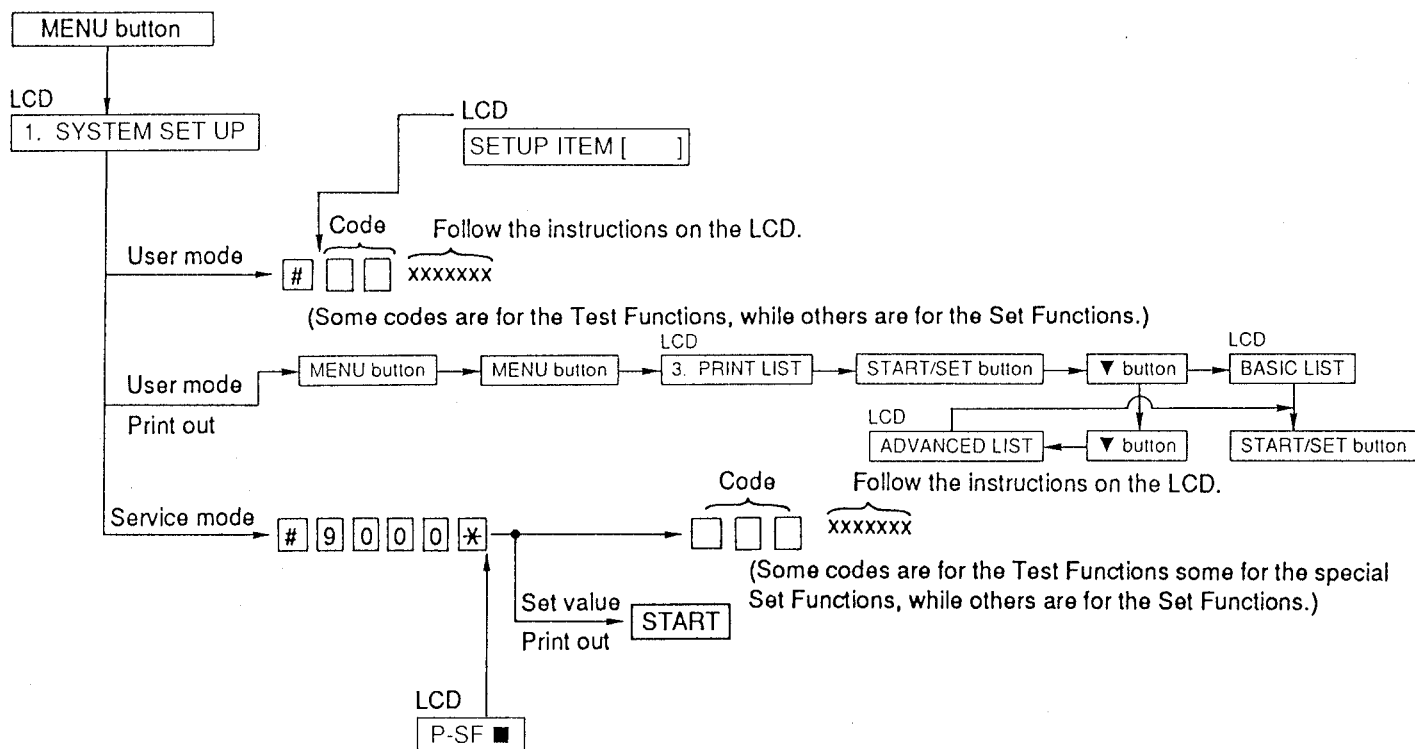
1-1. OPERATION

There are 2 basic categories of programming functions, the User Mode and the Service Mode. The Service Mode is further broken down into the normal and the special programs. The normal programs are those listed in the Operating Instructions and available to the user. The special programs are those listed only here and not displayed to the user. In both User and Service Mode, there are Set Functions and Test Functions. The Set Functions are used to program various features and functions, and the Test Functions are used to test various functions. The Set Functions are accessed by entering their code, changing the appropriate value, then pressing the SET key. The Test Functions are accessed by entering their code and pressing the key listed on the menu. While programming, to cancel any entry, press the STOP key.

1-2. OPERATION FLOW



Operating Procedure



1-3. USER MODE (The list below is an example of the SYSTEM SETUP LIST the unit prints out.)

BASIC FEATURE LIST

NO.	FEATURE	CURRENT SETTING	
#01	SET DATE & TIME	Jan. 01 1994 12:00AM	
#02	YOUR LOGO	Panasonic FAX SYSTEM	
Code → #03	YOUR TELEPHONE NUMBER		
#04	PRINT TRANSMISSION REPORT	ERROR	[ERROR, ON, OFF]
#06	TEL/FAX DELAYED RING	1	[1...4]
#07	FAX RING COUNT	1	[1...4]
#08	ANS/FAX RING COUNT	1	[1...4, TOLL SAVER, RINGER OFF]
#09	RECORDING TIME	VOX	[VOX, 1MIN]
#10	REMOTE ANS ID	ID = 111	

Set Value

ADVANCED FEATURE LIST

NO.	FEATURE	CURRENT SETTING	
Code → #21	LOGO POSITION	OUT	[OUT, IN, OFF]
#22	JOURNAL AUTO PRINT	ON	[ON, OFF]
#23	OVERSEAS MODE	OFF	[ON, OFF]
#24	JUNK MAIL PROHIBITOR	OFF	[ON, OFF]
		ID = 22	
#25	DELAYED TRANSMISSION	OFF	[ON, OFF]
		DESTINATION =	
		START TIME = 12:00AM	
#30	SILENT FAX RECOGNITION RING	3	[3...6]
#31	RING DETECTION	OFF	[OFF, A, B, C, D]
#41	REMOTE FAX ACTIVATION CODE	= **	
#42	MESSAGE ALERT	OFF	[ON, OFF]
#43	REC. TIME ALERT	OFF	[ON, OFF]
#46	ORIGINAL SETTING	NORMAL	[NORMAL, LIGHT, DARKER]
#50	MAIL BOX ALERT	OFF	[ON, OFF]
#51	BOX1 PASSWORD	= ***	
#52	BOX2 PASSWORD	= ***	
#53	BOX3 PASSWORD	= ***	
#60	COMMON PAGER	OFF	[ON, OFF]
		DESTINATION =	
#61	MAIL BOX1 PAGER	OFF	[ON, OFF]
		DESTINATION =	
#62	MAIL BOX2 PAGER	OFF	[ON, OFF]
		DESTINATION =	
#63	MAIL BOX3 PAGER	OFF	[ON, OFF]
		DESTINATION =	
#80	SET DEFAULT		

Set Value

Note:

The above values are default.

1-4. SERVICE FUNCTION TABLE

Code	Function	Set Value	Effective Range	Default	Remarks
501	Pause time set	×100 ms.	001~600	050	
502	Flash time set	×10 ms.	01~99	70	
503	Dial speed select	1..10 PPS 2..20 PPS	1, 2	1	
510	VOX time	1..6 sec 2..4 sec	1, 2	1	
520	CED frequency select	1..2100 Hz 2..1100 Hz	1, 2	1	
521	International mode select	1..On 2..Off	1, 2	1	
522	Auto recovery select	1..On 2..Off	1, 2	1	
523	Receive equalizer select	1..On 2..Off	1, 2	2	
550	Memory clear Returns the set values of #04~#23 (user selectable) to default.				"START" input
551	ROM check				"START" input
552	DTMF single tone transmit select	1..On 2..Off	1, 2	2	
553	Monitor on FAX communication select	1..Off 2..Phase B 3..All phases	1~3	1	
554	Modem test				"START" input
555	Scanner test				"START" input
556	Motor test				"START" input
557	LED test				"START" input
558	LCD test				"START" input
559	Paper jam detection select	1..On 2..Off	1, 2	1	
560	Cutter select	1..On 2..Off	1, 2	1	
561	KEY test				"START" input
562	Cutter test				"START" input
563	CCD position adjustment value set	×1 mm	00~30	—	
565	LCD contrast	1..Dark 2..Normal 3..Light	1, 2, 3	2	

Code	Function	Set Value	Effective Range	Default	Remarks
570	BREAK % select	1..61% 2..67%	1, 2	1	
571	ITS auto redial time set	xnumber of times	00~99	14	
572	ITS auto redial line disconnection time set	xsecond	001~999	030	
573	Remote turn-on ring number set	xnumber of rings	01~99	15	
574	Dial Tone Detection set	1..On 2..Off	1, 2	2	
580	TAM continuous tone detect	1..On 2..Off	1, 2	1	
582	2 way rec.	1..On 2..Off	1, 2	1	
583	2 way beep	xmsec	000~999	000	
586	White line skip 1 select	1..On 2..Off	1, 2	1	
587	White line skip 2 select	1..On 2..Off	1, 2	1	
589	TCF check mode	1..Normal 2..Severe	1, 2	1	
590	FAX auto redial time set	xnumber of times	00~99	05	
591	FAX auto redial line disconnection time set	xsecond	001~999	045	
592	CNG transmit select	1..Off 2..All 3..Auto	1~3	2	
593	Time between CED and 300 bps	1..75 ms 2..500 ms 3..1 sec	1, 2, 3	1	
594	Overseas DIS detection select	1..detects at the 1st time 2..detects at the 2nd time	1, 2	1	
595	Receive error limit value set	xnumber of times	001~999	100	
596	Transmit level set	xdBm	-15~00	10	The values entered without "minus sign" will be regarded as negative.
597	Transmit speed 2400 BPS fixed mode select	1..On 2..Off	1, 2	2	

Code	Function	Set Value	Effective Range	Default	Remarks
717	Transmit speed select	1..9600BPS 2..7200BPS 3..4800BPS 4..2400BPS	1~4	1	The fall back starts from each speed.
718	Receive speed select	1..9600BPS 2..7200BPS 3..4800BPS 4..2400BPS	1~4	1	The fall back starts from each speed.
719	Ringer Off in TEL/FAX mode	1..On 2..Off	1, 2	1	Selects whether the ring is on or off when the unit receives an incoming signal in the TEL/FAX mode when the ringer.
720	Manual tone detect	1..On 2..Off	1, 2	2	Sets the tone detection mode after dialing manually.
721	Pause tone detect	1..On 2..Off	1, 2	1	Sets the tone mode in pause.
722	Redial tone detect	1..On 2..Off	1, 2	1	Sets the tone detection mode after redialing.
731	CPC mode	1..A 2..B	1, 2	1	
732	AUTO disconnect	1..350 msec 2..1.8 sec 3..OFF	1~3	1	Time of the detection of AUTO disconnect.
771	T1 Timer	1..35 sec 2..60 sec	1, 2	1	
815	Sensor & VOX check				"START" input
—	User setting list output				"START" input

DTMF single tone transmit select

When set to ON (=1), the 12 keys and transmission frequencies are as shown.

Key	Frequency (Hz)	Key	Frequency (Hz)
"1"	697	"5"	1209
"2"	770	"6"	1336
"3"	852	"7"	1477
"4"	941		

When set to OFF (=2), the 12 keys and transmission frequencies are as shown.

High (Hz)		1209	1336	1477
Low (Hz)	697	"1"	"2"	"3"
	770	"4"	"5"	"6"
	852	"7"	"8"	"9"
	941	"10"	"0"	"#"

1-5. SERVICE MODE SETTING VALUES (Example of a printed out list)

SERVICE DATA LIST

Code		Set Value	
501 PAUSE TIME	=	050*100ms	[001...600]*100ms
502 FLASH TIME	=	70*10ms	[01...99]*10ms
503 DIAL SPEED	=	10pps	[1=10 2=20]pps
510 VOX TIME	=	6sec	[1=6 2=4]sec
520 CED FREQ.	=	2100Hz	[1=2100 2=1100]Hz
521 INTL. MODE	=	ON	[1=ON 2=OFF]
522 AUTO STANDBY	=	ON	[1=ON 2=OFF]
523 RX EQL.	=	OFF	[1=ON 2=OFF]
565 LCD CONTRAST	=	NORMAL	[1=NORMAL 2=LIGHT 3=DARKER]

SPECIAL SERVICE SETTINGS

552	553	559	560	563	570	571	572	573	574	580	582	583
2	1	1	1	015	1	014	030	015	2	1	1	000
586	587	589	590	591	592	593	594	595	596	597	717	718
1	1	1	005	045	2	1	1	100	10	2	1	1
719	720	721	722	731	732	771						
1	2	1	1	1	1	1						

Version = F601D

SUM = 4C5B

Note:

The above values are default.

2. TEST FUNCTIONS

Test mode	Type of Mode	•Code <input type="checkbox"/> <input type="checkbox"/>	•Operation after code input.	Function
PRINT TEST	User mode	[8][5]	START	Print a test pattern and check the thermal head for abnormalities (missing dots, etc.), and also check the operation of the reception motor.
MOTOR TEST	Service Mode	[5][5][6]	START	Rotate the transmission and reception motors to check the operation of the motors.
MODEM TEST	Service Mode	[5][5][4]	START	Send four kinds of FAX signals to check the sending function of the modem. 1) 1100 Hz: Consecutive signal of EOM for tonal. 2) 2100 Hz: G2 carrier signal Consecutive of CED signal 3) G3, V29 training signal [modulation wave of carrier signal (1700 Hz)]
ROM CHECK	Service Mode	[5][5][1]	START	Indicate the version and check sum of the ROM.
SCAN CHECK	Service Mode	[5][5][5]	START	Turn on the LEDs of the image sensor and operate the read system.
LCD CHECK	Service Mode	[5][5][8]	START	Check the LCD indication. Illuminate all dots to check if they are normal.

DTMF SINGLE TEST	Service Mode	[5][5][2]	Output the DTMF by single tone.
		1..On 2..Off	
LED TEST	Service Mode	[5][5][7]	All LEDs flashes on and off, or is illuminated.
		START	
KEY CHECK	Service Mode	[5][6][1]	Check the operation button. Indicate the button code at LCD while the button is pressed.
		START {any key}	
FACTORY SET	Service Mode	[5][5][0]	Clear the memory in which the user can store data.
		START	
CUTTER TEST	Service Mode	[5][6][2]	Check the cutter operation.
		START	
SENSOR CHECK & VOX CHECK	Service Mode	[8][1][5]	CHECK SENSOR OPERATION [Do Sn Co Ja Pa At Cu] : LCD DISPLAY Do: Door Open Sensor : Paper inserted Sn: Read Position Sensor : at the read Position Co: Cover Open Sensor : Cover Open Ja: Jam Sensor : Jam Pa: Recording Paper Sensor : Set Recording Paper At: Anti-curl Position SW : Home Position Cu: Cutter Position SW : Home Position ----- MONITOR The Vox Signal When there is sound from LINE or EXT-TEL, Mute LED lights ON.
		START	

2-1. BUTTON CODE TABLE

Code	Button Name	Code	Button Name	Code	Button Name	Code	Button Name
02	RESOLUTION	22	HELP	35	5	3D	REDIAL/PAUSE
04	START/SET	24	DIRECTORY	36	6	3E	FLASH
05	LOWER	25	^ VOLUME	37	7	51	STATION 1/6
06	COPY	26	v VOLUME	38	8	52	STATION 2/7
08	SP-PHONE	31	1	39	9	53	STATION 3/8
0A	MUTE	32	2	3A	0	54	STATION 4/9
0C	RECEIVE MODE	33	3	3B	*	55	STATION 5/10
20	MENU	34	4	3C	#		

3. COMMUNICATION ERROR FUNCTIONS

3-1. OPERATION

1. Press the MENU button 3 times.
2. Press the START/SET button and ▼ button 4 times.
3. Press the START/SET button.
4. Print out.

3-2. ERROR CORD TABLE

CODE	RESULT	MODE	Symptom	Counter-measure
	PRESSED THE STOP KEY	TX & RX	Communication was interrupted with the STOP button	
	DOCUMENT JAMMED	TX	Document paper is jammed	
	NO DOCUMENT	TX	No document paper	
	PRINTER OVERHEATED	RX	Thermal head is overheated	
	PAPER OUT	RX	Out of thermal paper	
	THE COVER WAS OPENED	TX & RX	Cover is open	
	PAPER JAMMED	RX	Recording paper is jammed	
40	NO RESPONSE	TX	Transmission is finished when T1 TIMER is expired	1
41	COMMUNICATION ERROR	TX	DCN is received after DCS transmission	2
42	COMMUNICATION ERROR	TX	FTT is received after transmission of 2400BPS training signal	3
43	COMMUNICATION ERROR	TX	No response after post message is transmitted three times	4
44	COMMUNICATION ERROR	TX	RTN and PIN are received	5
46	COMMUNICATION ERROR	RX	No response after FTT is transmitted	6
48	COMMUNICATION ERROR	RX	No post message	7
49	COMMUNICATION ERROR	RX	RTN is transmitted	8
50	COMMUNICATION ERROR	RX	PIN is transmitted (to PRI-Q)	8
51	COMMUNICATION ERROR	RX	PIN is transmitted	8
52	NO RESPONSE	RX	Reception is finished when T1 TIMER is expired	9
53	COMMUNICATION ERROR	TX	DCN is received after transmission of NSC and DTC	10
54	COMMUNICATION ERROR	RX	DCN is received after DIS transmission	11
57	COMMUNICATION ERROR	TX	300BPS error	12
58	COMMUNICATION ERROR	RX	DCN is received after FTT transmission	13
59	COMMUNICATION ERROR	TX	DCN responds to post message	14
64	COMMUNICATION ERROR	TX	Polling is not possible	15
68	COMMUNICATION ERROR	RX	No response at the other party after MCF or CFR is transmitted	13
70	COMMUNICATION ERROR	RX	DCN is received after CFR transmission	13
72	COMMUNICATION ERROR	RX	Carrier is cut when image signal is received	16
FF	COMMUNICATION ERROR	TX & RX	Modem error	12

TX=TRANSMISSION RX=RECEPTION

4. REMOTE PROGRAMMING

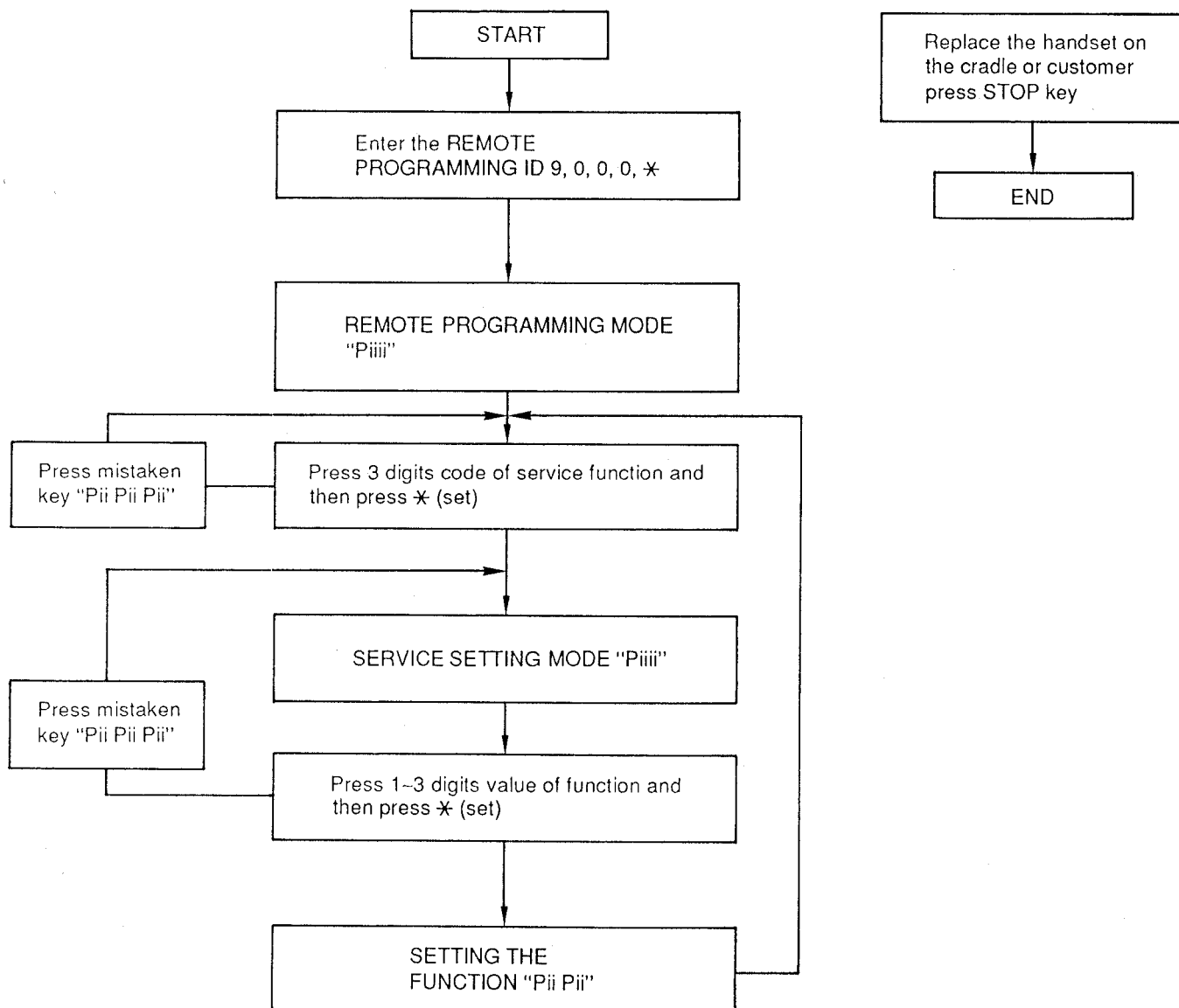
While a user is talking on the phone, a technician can set the functions of customer's unit from service center.

1. A call comes in service center.
2. A technician gets a claim from a customer.
3. He says to the customer "please press MENU button and wait for a moment".
4. The technician dial '9, 0, 0, 0, *' from his telephone.
The customer's unit is set REMOTE PROGRAMMING MODE and generates remote beep sound.
He hears "Piiii" (one long beep).
5. He presses 3 digits code of service function written in service manual by dial keypad.
And presses * (set).
The customer's unit receives the service code.
He hears "Piiii" (one long beep).
6. He presses 1-3 digits value of function written in service manual by dial keypad.
And presses * (set).
The customer's unit receives the service value.
He hears "Pii Pii" (double short beeps).
7. Then he can repeat from step 5.
8. When he wishes to end the REMOTE PROGRAMMING MODE, he replaces the handset on the cradle or the customer presses the STOP button.

NOTE:

- 1) To enter the REMOTE PROGRAMMING MODE is necessary in Step 3. Because the unit can not easily enter the REMOTE PROGRAMMING MODE by DTMF signal from the other party.
- 2) If he presses wrong buttons when his operation is in step 5 or 6, he hears "Pii Pii Pii" (triple short beeps). Then he can repeat from the same step.
- 3) When customer's unit finishes transmitting a list (No. 991, 992, 994, 999), he can have a voice conversation.
And he can continue the REMOTE PROGRAMMING MODE, but this feature is effective from version L.
- 4) When customer's unit start transmitting a list (No. 991, 992, 994, 999), he does not hear "Pii Pii" (double short beeps).
The unit generate CNG sound.

4-1. SUMMARY OF REMOTE PROGRAMMING MODE



4-2. PROGRAM MODE TABLE

Code	Function	Set Value	Default	Remote setting
01	Set date and time	-----	94/1/1	NG
02	Your logo	up to 30 digits	PANASO	NG
03	Your telephone number	up to 20 digits	(NONE)	NG
04	Print transmission report	ERROR/ON/OFF	ERROR	OK
06	TEL/FAX delayed ring	1 to 4 rings	1	OK
07	FAX ring count	1 to 4 rings	1	OK
08	ANS/FAX ring count	1~4 TOLL SAVER /RINGER OFF	1	OK
09	Recording time for ANS	VOX/1MIN	VOX	OK
10	Remote ANS ID	1 to 3 digits	111	NG
21	Logo position	OUT/IN/OFF	OUT	OK
22	Journal auto print	ON/OFF	ON	OK
23	Overseas mode	ON/OFF	OFF	NG
24	Junk mail prohibitor	ON/OFF ID = 2 digits (22)	OFF/22	NG
25	Delayed transmission	ON/OFF	OFF	NG
30	Silent FAX recognition ring	3 to 6 rings	3	OK
31	Ring detection	A/B/C/D/OFF	OFF	OK
41	Remote FAX activation code	up to 4 digits	**	NG
42	Message alert	ON/OFF	OFF	OK
43	Recording time alert	OFF	OFF	OK
46	Original setting	NORMAL/LIGHT/DARKER	NORMAL	NG
50	Mail box alert	ON/OFF	OFF	OK
51	Box 1 password	3 digits	555	NG
52	Box 2 password	3 digits	555	NG
53	Box 3 password	3 digits	555	NG
60	Common pager	ON/OFF	OFF	NG
61	Mail box 1 pager	ON/OFF	OFF	NG
62	Mail box 2 pager	ON/OFF	OFF	NG
63	Mail box 3 pager	ON/OFF	OFF	NG
80	Set default	YES/NO	NO	NG
501	Pause time set	001~600 x 100msec	050	OK
502	Flash time set	01~99 x 10msec	70	OK
503	Dial speed set	1:10/2:20pps	10	OK
520	CED frequency select	1:2100/2:1100Hz	2100	OK
521	International mode select	1:ON/2:OFF	ON	OK
522	Auto recovery select	1:ON/2:OFF	ON	OK
523	Receive equalizer select	1:ON/2:OFF	OFF	OK
550	Memory clear	"START" push	-----	NG
551	ROM check	"START" push	-----	NG
552	DTMF signal tone transmit select	1:ON/2:OFF	OFF	NG
553	Monitor on FAX communication select	1:OFF/2:P-B/3:ALL	OFF	NG
554	Modem test	"START" push	-----	NG
555	Scanner test	"START" push	-----	NG
556	Motor test	"START" push	-----	NG
557	LED test	"START" push	-----	NG
558	LCD test	"START" push	-----	NG
559	Paper jam detection select	1:ON/2:OFF	ON	OK
560	Cutter select	1:ON/2:OFF	ON	NG

Code	Function	Set Value	Default	Remote setting
561	Key test	"START" push	-----	NG
562	Cutter test	"START" push	-----	NG
563	CCD position, adjustment value set	00~30	15	OK
565	LCD contrast	1:DARK/2:NORMAL/3:LIGHT	NORMAL	OK
570	Break % select	1:61/2:67%	61%	NG
571	ITS auto redial time set	00~99	014	OK
572	ITS auto redial line disconnection time set	001~999	030	OK
573	Remote turn-on ring number set	01~99	15	OK
574	Dial tone detection set	1:ON/2:OFF	OFF	OK
580	TAM continuous tone detect	1:ON/2:OFF	ON	OK
582	2 way record	1:ON/2:OFF	ON	OK
583	2 way beep	001~999msec	000	OK
586	White line skip 2 select	1:ON/2:OFF	ON	OK
587	White line skip 2 select	1:ON/2:OFF	ON	OK
589	TCF check mode	1:NORMAL/SEVERE	NORMAL	OK
590	FAX auto redial time set	00~99	05	OK
591	FAX auto redial line disconnection time set	001~999	045	OK
592	CNG transmit select	1:OFF/2:ALL/3:AUTO	All	OK
593	Time between CED and 300 bps	1:75/2:500/3:1s	75ms	OK
594	Overseas DIS detection select	1:1st/2:2nd	1st	OK
595	Receive error limit value set	001~999	100	OK
596	Transmit level set	-15~00dBm	10	OK
597	Transmit speed 2400bps fixed mode select	1:ON/2:OFF	OFF	OK
717	Transmit speed select	1:9600/2:7200/3:4800/4:2400bps	9600bps	OK
718	Receive speed select	1:9600/2:7200/3:4800/4:2400bps	9600bps	OK
719	Ringer off in TEL/FAX mode	1:ON/2:OFF	ON	OK
720	Manual tone detect	1:ON/2:OFF	OFF	OK
721	Pause tone detect	1:ON/2:OFF	ON	OK
722	Redial tone detect	1:ON/2:OFF	ON	OK
731	CPC mode	1:A/2:B	A	OK
732	Auto disconnect cancel time	1:350msec/2:1800msec/3:OFF	350msec	OK
771	T1 timer	1:35sec/2:60sec	35sec	OK
815	Sensor and check	"START" push	-----	NG
991	Transmit basic list	1:START	-----	OK
992	Transmit advanced list	1:START	-----	OK
994	Transmit journal report	1:START	-----	OK
999	Transmit service list	1:START	-----	OK

5. SERVICE HINTS

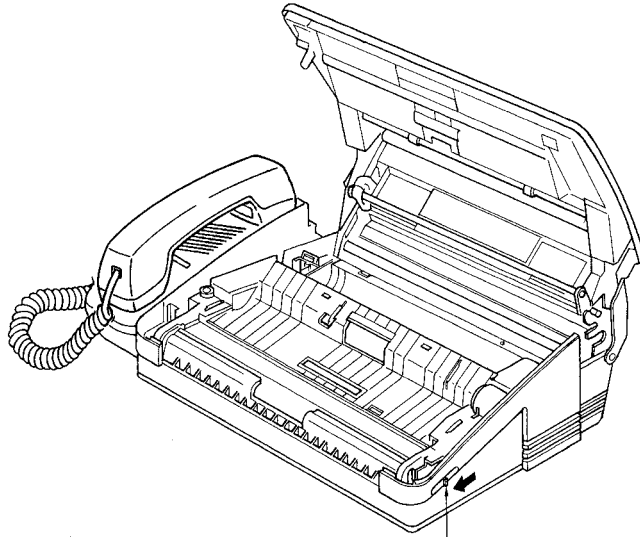
SYMPTOM	CURE
1. Defective general ITS operation	Defective solder IC1 on analog board or check for solder short.
2. Other defective operation	Defective solder on IC4 or IC5, check for solder short. (Refer to page 39.)

DISASSEMBLY INSTRUCTIONS

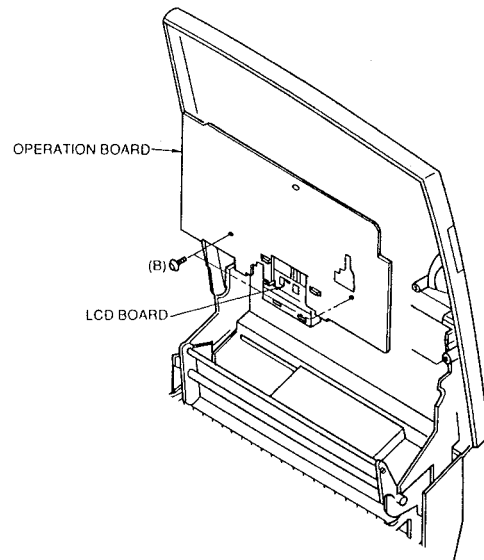
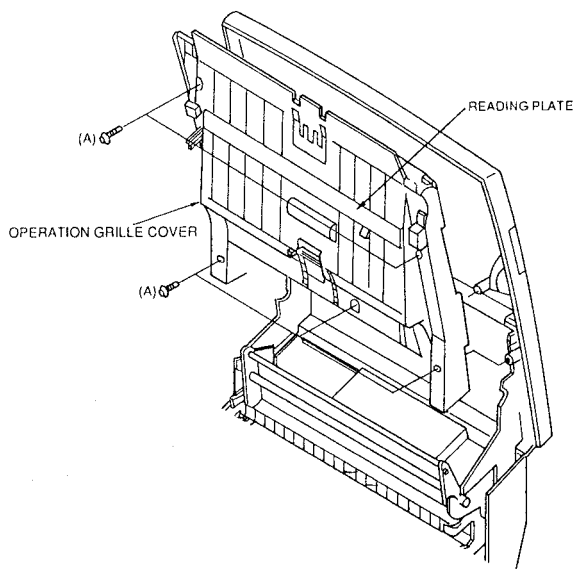
Ref. No. 1 HOW TO REMOVE THE OPERATION AND LCD BOARDS

Procedure 1

- 1) Push the top cover open knob in the direction of the arrow to open the operation grille.
- 2) Remove the 5 screws (A) and remove the operation grille cover.
- 3) Remove the 2 screws (B).
- 4) Pull out the 1 connector and remove the operation board.
- 5) Remove the LCD board.



TOP COVER OPEN KNOB



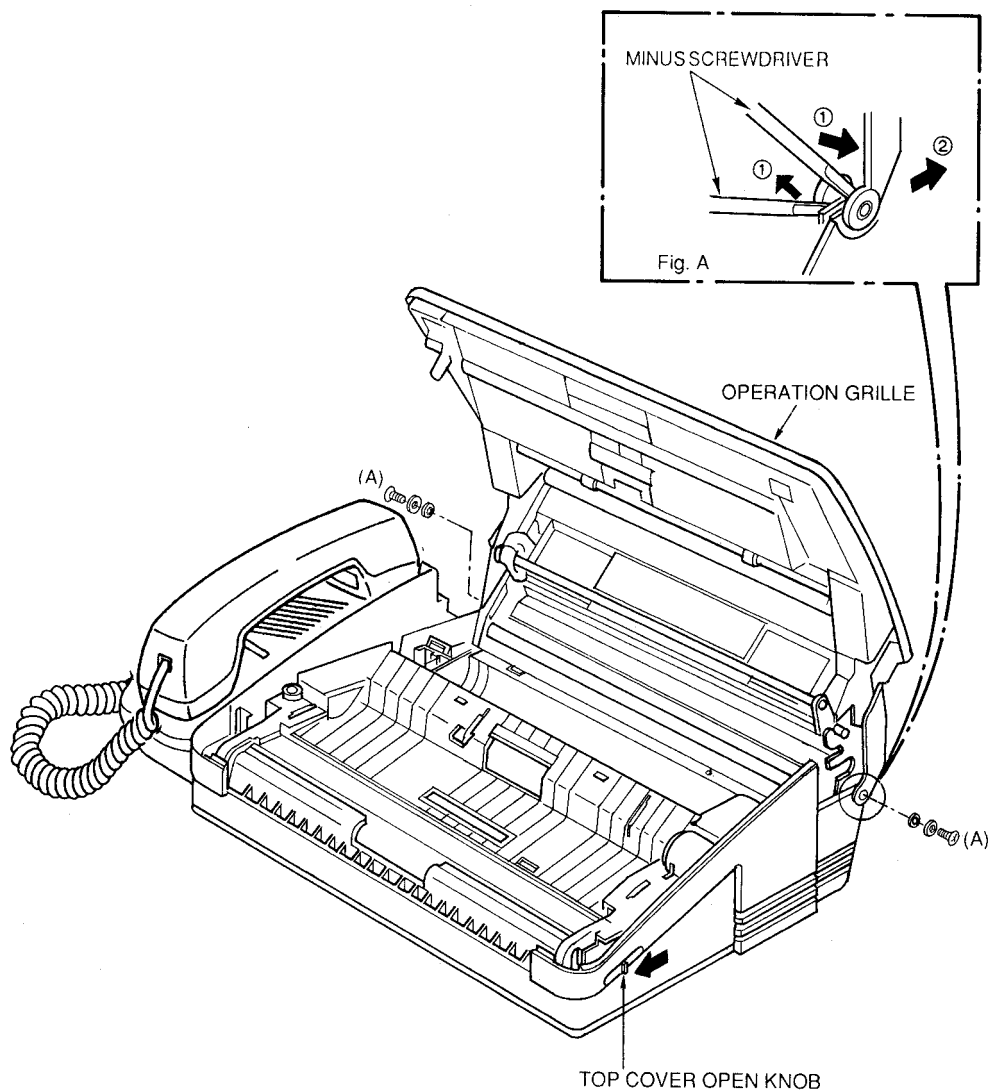
HOW TO CLEAN:

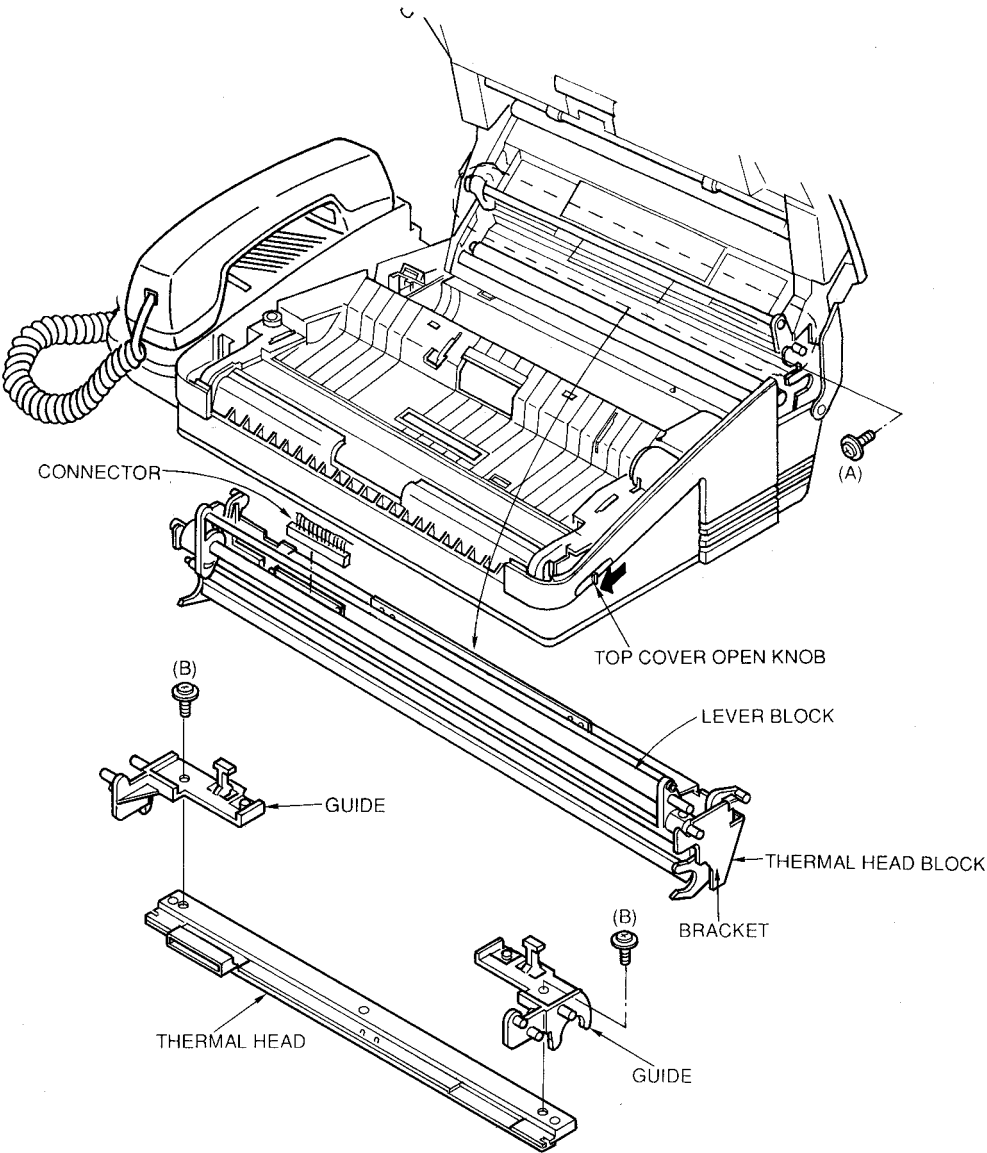
Clean the reading plate
with cloth soaking in
alcohol.

Ref. No. 2	HOW TO REMOVE THE OPERATION GRILLE
------------	---

Procedure	1 → 2
-----------	-------

- 1) Push the top cover open knob in the direction of the arrow to open the operation grille.
- 2) Remove the 2 screws (A).
- 3) Remove the arm of the operation grille from the boss. (See Fig. A)
- 4) Remove the operation grille.



Ref. No. 3	HOW TO REMOVE THE THERMAL HEAD
Procedure 3	<ol style="list-style-type: none"> 1) Push the top cover open knob in the direction of the arrow to open the operation grille. 2) Remove the 2 screws (A) and remove the thermal head block. 3) Pull out the 1 connector. 4) Remove the lever block. 5) Remove the thermal head from bracket. 6) Remove the 2 screws (B) of thermal head to remove the guides. 7) Replace the thermal head.
	 <p>The diagram illustrates the disassembly of a thermal printer's internal components. It shows the printer with its top cover open. Key parts labeled include the CONNECTOR, TOP COVER OPEN KNOB, LEVER BLOCK, THERMAL HEAD BLOCK, BRACKET, GUIDE, and THERMAL HEAD. Screws (A) are shown being removed from the thermal head block, and screws (B) are shown being removed from the thermal head. Arrows indicate the removal of the top cover knob and the thermal head block.</p> <p>HOW TO CLEAN: Clean the printing surface of thermal head with cloth soaking in alcohol.</p>

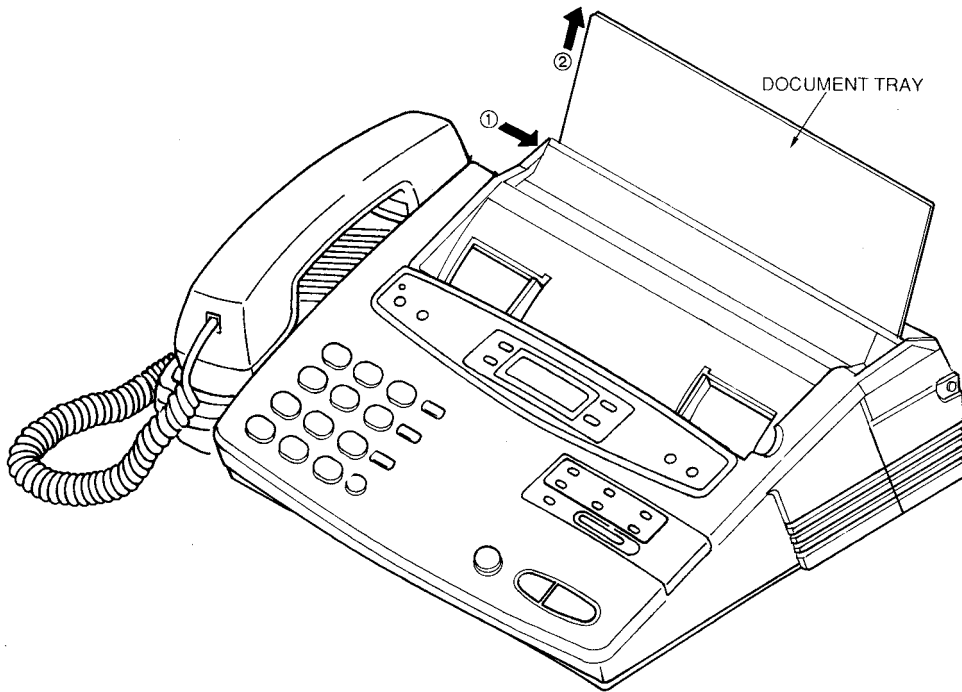
Ref. No. 4

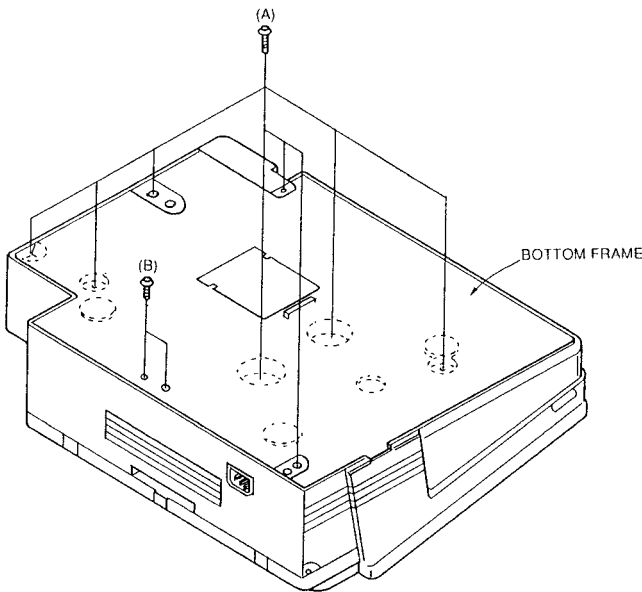
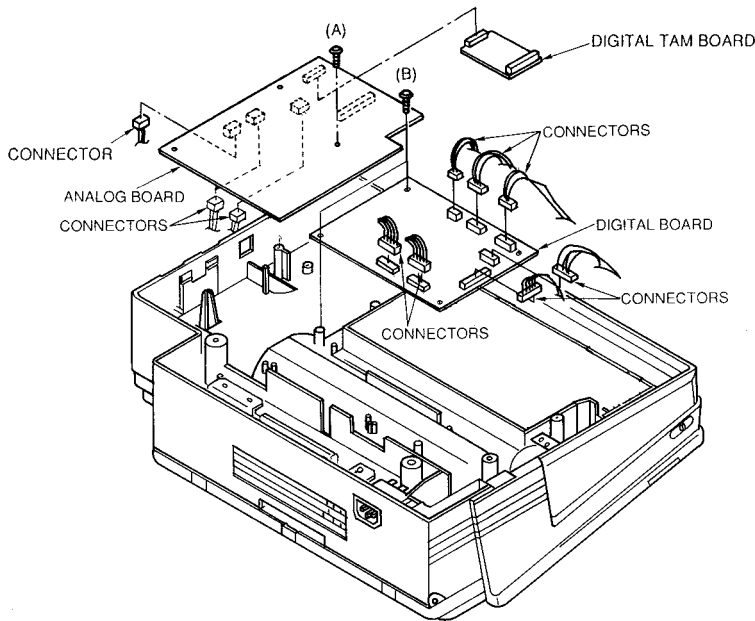
HOW TO REMOVE THE DOCUMENT TRAY

Procedure

4

1) Push the installing section in the direction of the arrow to remove the document tray.

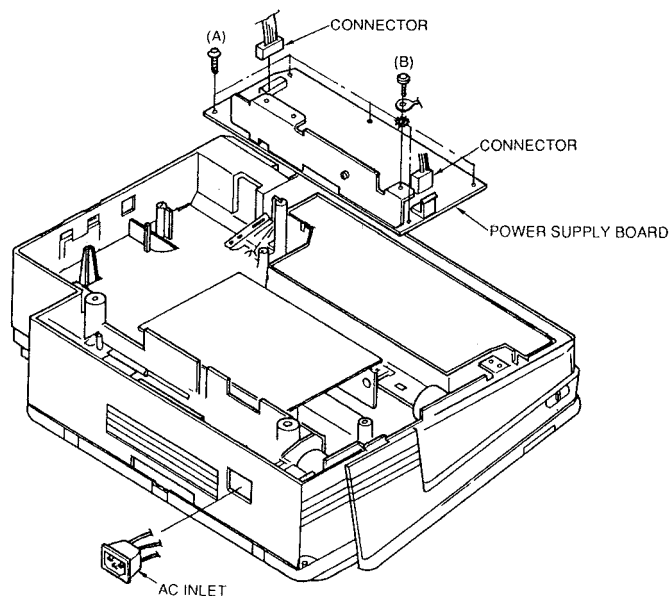


Ref. No. 5	HOW TO REMOVE THE BOTTOM FRAME	
Procedure 5	<div>1) Remove the 8 screws (A).</div> <div>2) Remove the 2 screws (B).</div> <div>3) Remove the bottom frame.</div>	
<div></div>		
Ref. No. 6	HOW TO REMOVE THE ANALOG, DIGITAL AND DIGITAL TAM BOARDS	
Procedure 5 → 6	<div>1) Remove the 1 screws (A).</div> <div>2) Remove the analog board.</div> <div>3) Remove the digital TAM board.</div> <div>4) Remove the 3 connectors.</div> <div>5) Remove the 7 connectors.</div> <div>6) Remove the 2 screws (B).</div> <div>7) Remove the digital board.</div>	
<div></div>		

Ref. No. 7	HOW TO REMOVE THE POWER SUPPLY BOARD AND AC INLET
------------	--

Procedure 5 → 7

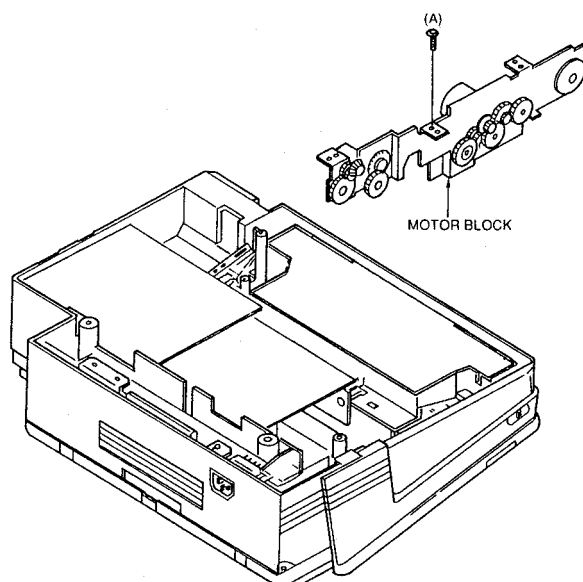
- 1) Remove the analog board (See Ref. No. 6)
- 2) Remove the 5 screws (A) and remove the power supply board.
- 3) Remove the 2 connectors.
- 4) Remove the 1 screw (B).
- 5) Remove the AC inlet.



Ref. No. 8	HOW TO REMOVE THE MOTOR BLOCK
------------	--------------------------------------

Procedure 5 → 8

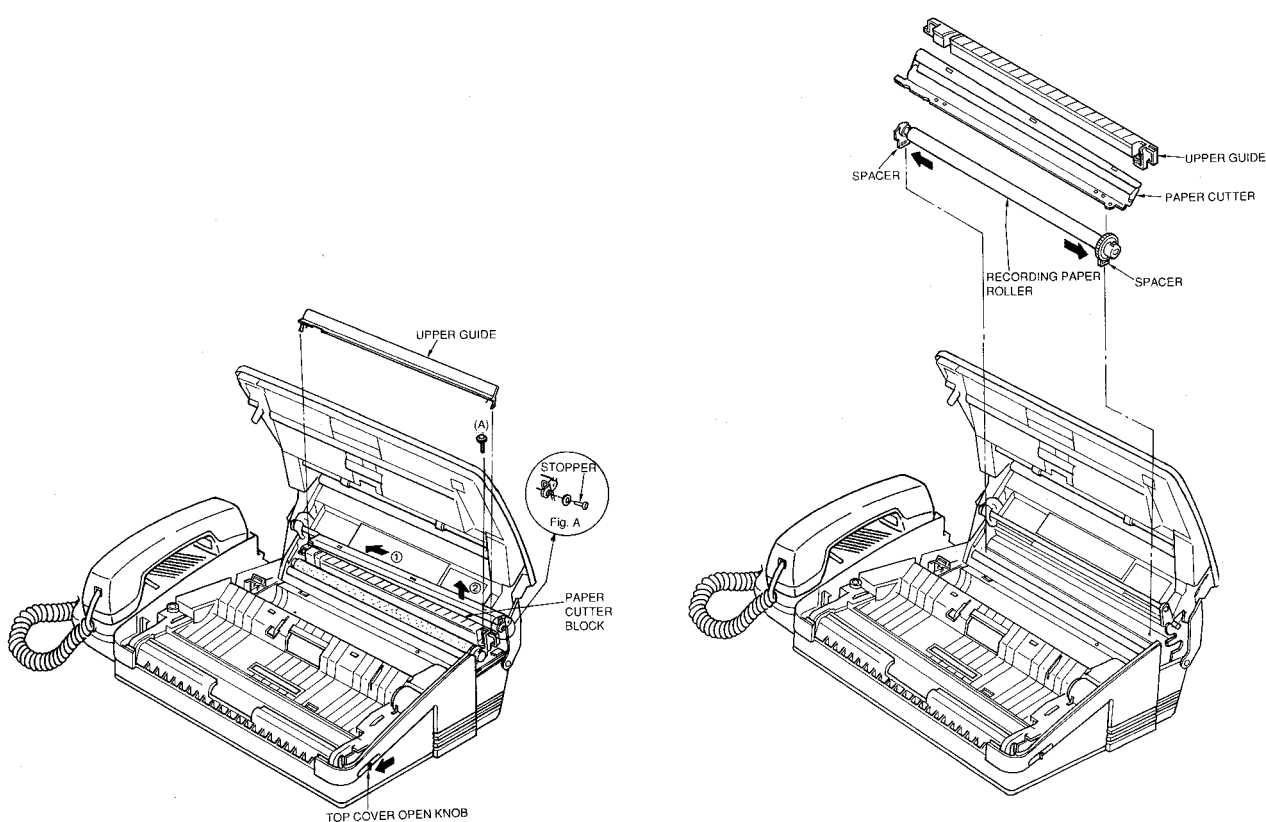
- 1) Remove the paper cutter (See Ref. No. 9)
- 2) Remove the 1 screw (A).
- 3) Remove the motor block.



Ref. No. 9	HOW TO REMOVE THE PAPER CUTTER AND RECORDING PAPER ROLLER
------------	--

Procedure 5→7→9

- 1) Push the top cover open knob in the direction of the arrow to open the operation grille.
- 2) Remove the upper guide.
- 3) Remove the 1 screw (A).
- 4) Remove the stopper. (See Fig. A)
- 5) Remove the paper cutter block.
- 6) Remove the lower guide.
- 7) Replace the paper cutter.
- 8) Remove the recording paper roller by pressing the spacer in the direction of the arrow from inside the unit.



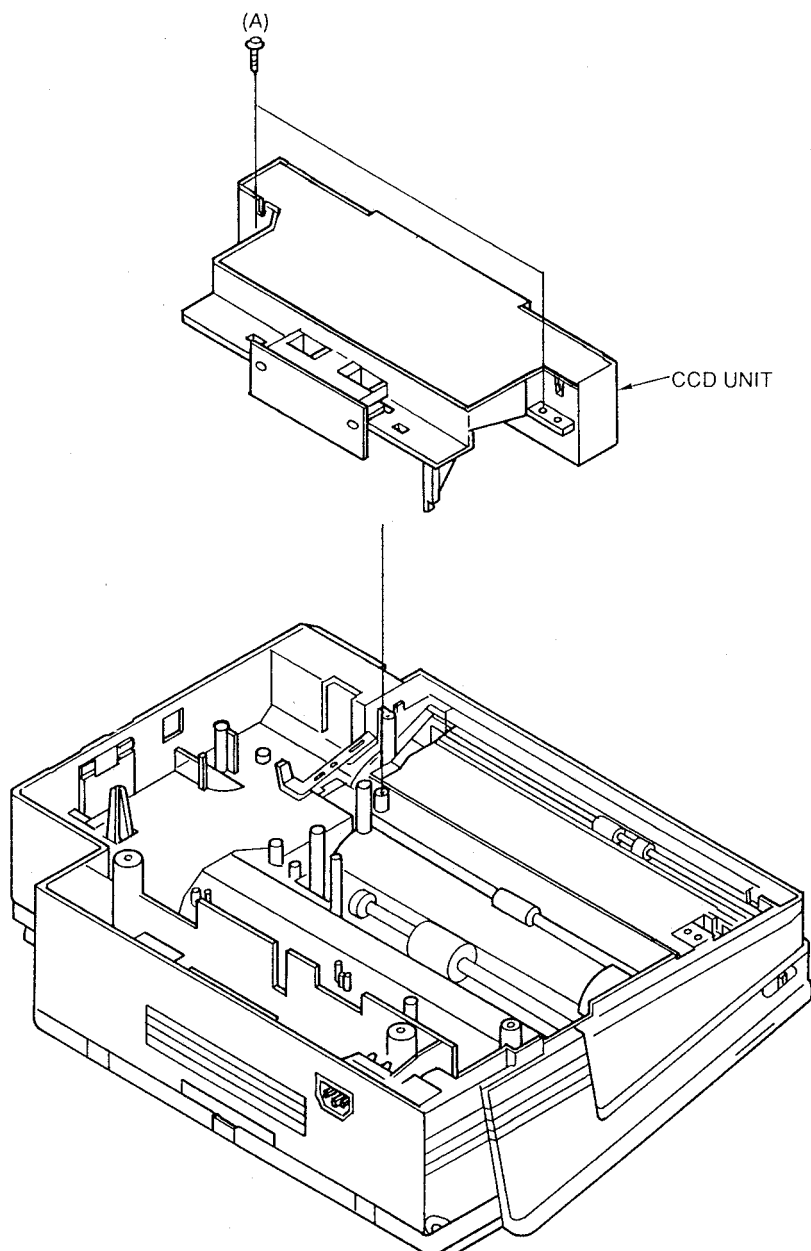
HOW TO CLEAN:
Clean the roller with
cloth soaking in
alcohol.

Ref. No. 10 **HOW TO REMOVE THE CCD UNIT.**

Procedure

5 → 6 → 10

- 1) Remove the 2 screws (A).
- 2) Remove the CCD unit.



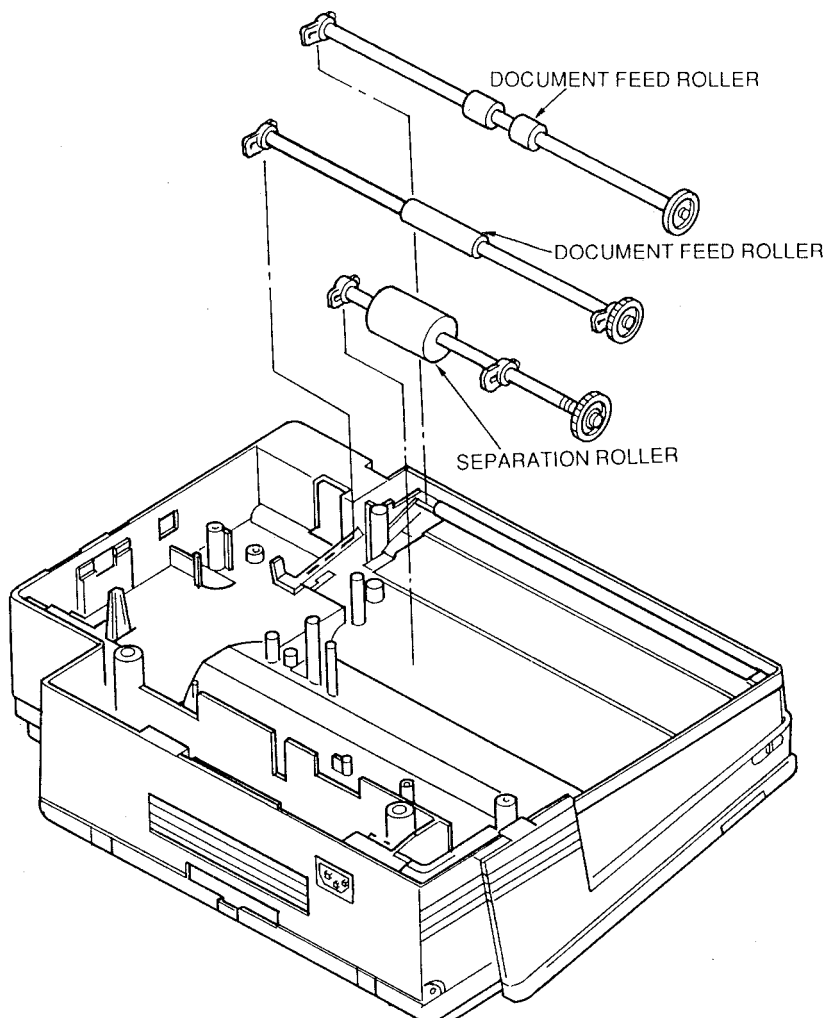
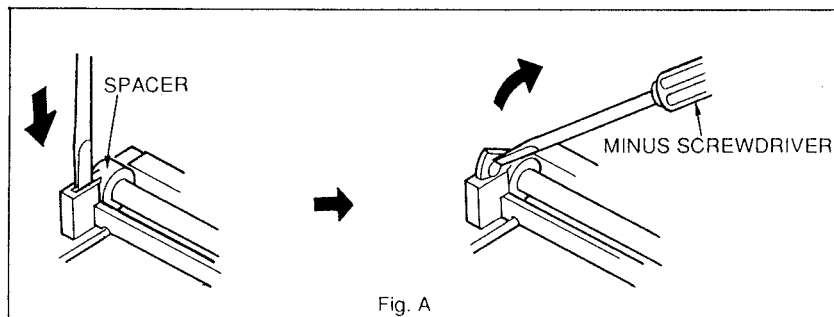
HOW TO CLEAN:

Clean the glass of CCD unit with cloth soaking in alcohol.

Ref. No. 11	HOW TO REMOVE THE ROLLERS
-------------	----------------------------------

Procedure	
-----------	--

- | | |
|----------------------------|--|
| 5 → 6 → 8 →
9 → 10 → 11 | <ol style="list-style-type: none">1) Remove the motor block. (See Ref. No. 8)2) Remove the spacer with minus screwdriver (small size) as showing in following Fig. A.3) Remove the roller.4) Remove the gear and spacer from roller shaft and replace roller. |
|----------------------------|--|



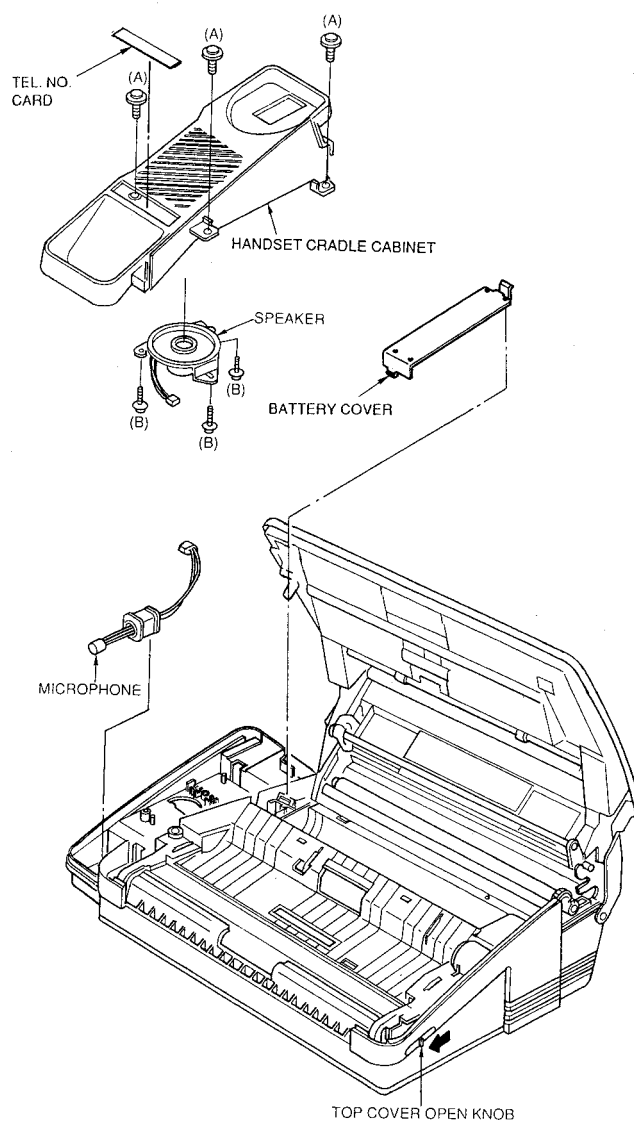
Ref. No. 12

HOW TO REMOVE THE HANDSET CRADLE CAB, SPEAKER AND MICROPHONE

Procedure

12

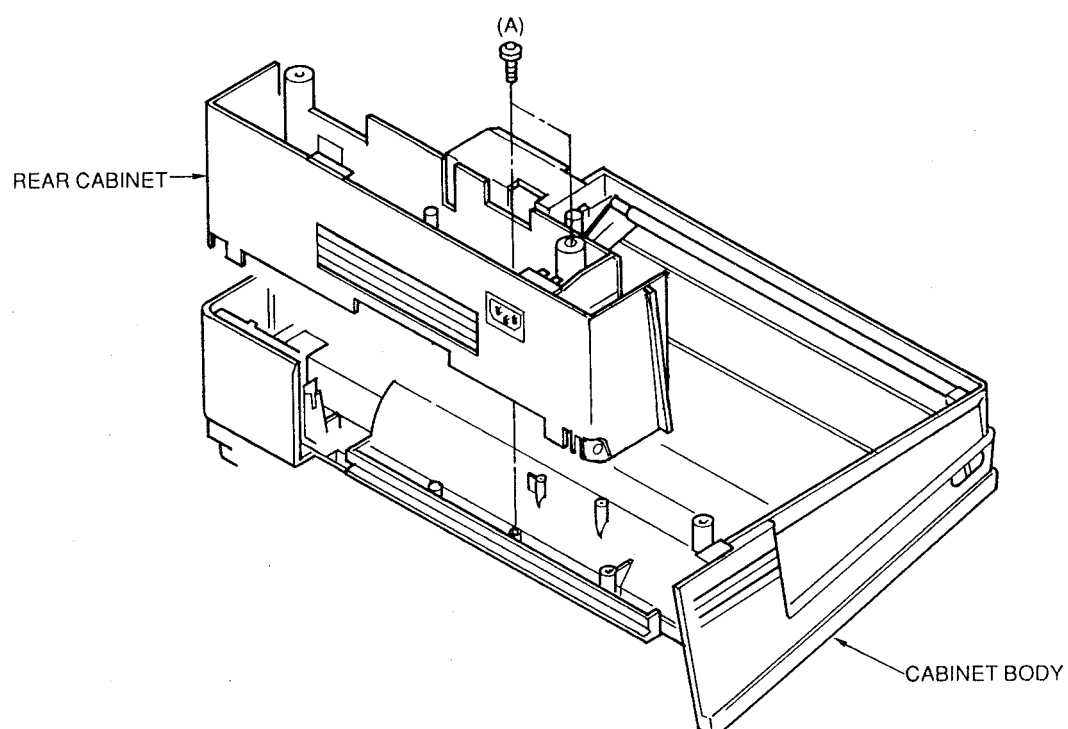
- 1) Push the top cover open knob to open the top cover.
- 2) Remove the 3 screws (A).
- 3) Remove the battery cover.
- 4) Remove the handset cradle cabinet.
- 5) Remove the 3 screws (B).
- 6) Remove the speaker.
- 7) Remove the microphone.



Ref. No. 13 **HOW TO REMOVE THE CABINET BODY AND REAR CABINET**

Procedure

- 6 → 7 → 8 → 9 1) Remove the 2 screws (A).
→ 10 → 11 → 12 2) Remove the cabinet body and rear cabinet.



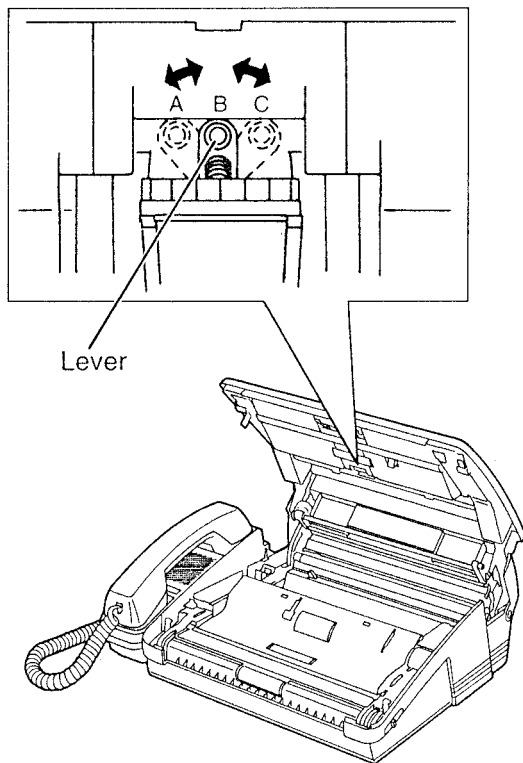
ADJUSTMENTS

1. TABLE OF TEST EQUIPMENTS AND TOOL

No.	Test Equipment and Jig Name	Jig No.
1	Oscilloscope	-----
2	CCD Tool	PQZZF500M
3	Extension Cord	PQZZ2K12Z,PQZZ8K18Z
4	Spring Height Tool	PQZZ2F500M

2. ADJUSTING THE FEEDER PRESSURE

If misfeeding of documents, such a multiple feeding or no feeding, occurs frequently, try to adjust the feeder pressure by following steps below.



- ❶ Open the top cover.
- ❷ Shift the position of the lever by using an instrument with a pointed end, like a clip or ball-point pen.
Position A: The case of no feeding
Position B: Standard position
Position C: The case of multiple feeding
- ❸ Close the top cover carefully by pressing down on both ends gently.

3. CONFIRMATION OF SEPARATION SPRING

1. Open the operation grille.
2. Check the highest level of the separation spring with the spring height tool (PQZZ2F500M). Please make sure that the separation spring does not touch the tool during this operation. (Both right and left) (See Fig. 1).
3. Check the lowest level of the separation spring with the opposite side of the spring height tool. Please make sure that the separation spring touches the tool during this operation. (Both right and left) (See Fig. 2).

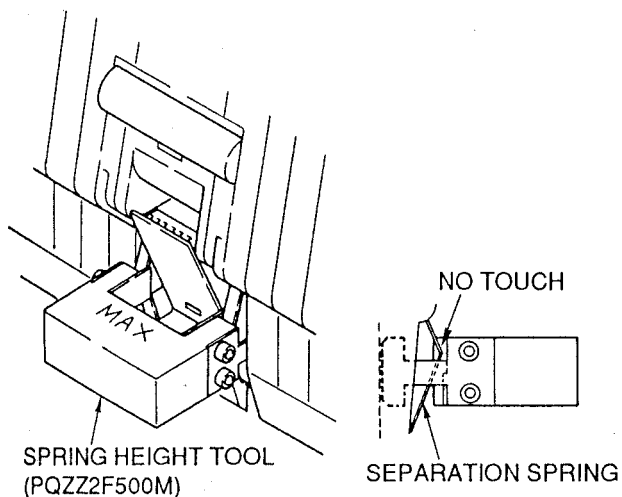


Fig. 1

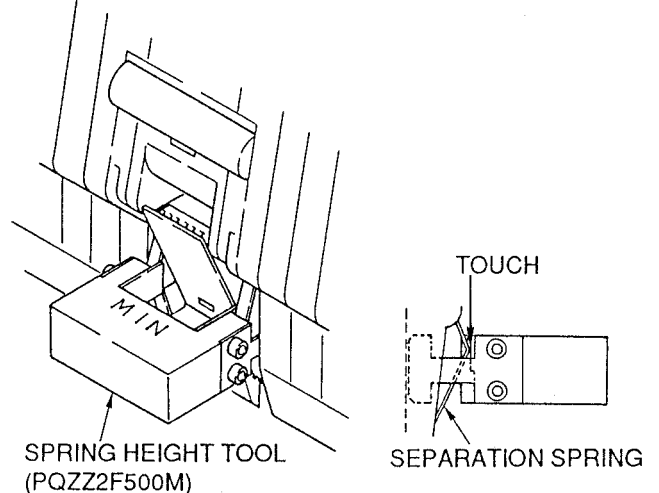


Fig. 2

4. CCD ADJUSTMENTS

Perform the following adjustment after replacing lens and CCD board.

PREPARATION:

- 1) Remove the CCD unit from set. (Refer to page 70)
- 2) Make oscilloscope connections as shown in next page.
- 3) Attach the CCD TOOL on the CCD unit.
- 4) Connect between CCD unit and digital board with extension cord (Part No. PQZZ8K18Z). (Refer to next page).
- 5) Connect between LED array and digital board with extension cord (Part No. PQZZ2K12Z). (Refer to next page).
- 6) Connect AC cord.
- 7) Press the MENU button.
- 8) Press the #, 9, 0, 0, 0, and * buttons.
- 9) Press the 5, 5 and 5 buttons.

Notes:

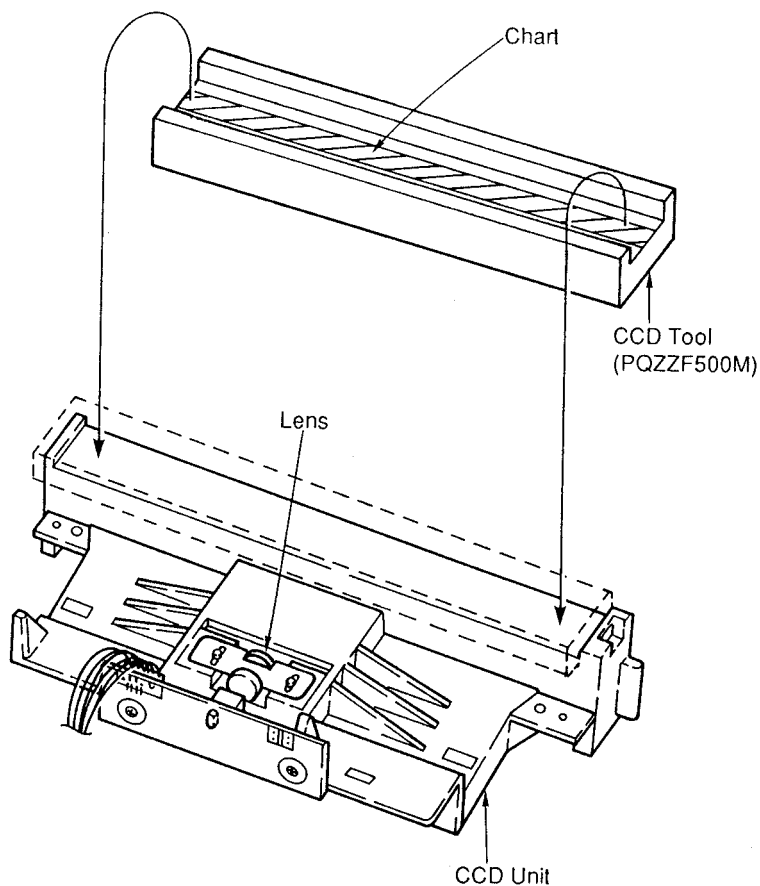
- 1) When replacing the lens, pay attention to the markings on the lens are white and yellow.
The number of the CCD spacers to use differs depending on the markings as follows.
* Refer to page 176 for the location of the CCD spacer.

Marking on the lens	Number of CCD Spacer
White	0 (not used)
Yellow	1

- 2) Install the lens so that the marking (White or Yellow) on it is upper side.
- 3) Do not touch the glass face of the lens with the bare hands.
- 4) If you have no instrument to repair, trim off the chart on page 75, then attach on the target glass. (This is a temporary treatment. You should use an instrument for this adjustment purpose, if you require an accurate repairment.)

Cleaning:

If the lens is dirty, clean it with a dry soft cloth.



Note:

Please adjust with covering topside of the lens by hands in order not to let in outdoor daylight.

ADJUSTMENT:

LENS AND CCD READ POSITION ADJUSTMENT

- 1) Loosen the lens fixing screw and CCD board fixing screw.
- 2) Adjust the position of the lens and CCD board so that the waveform appears as shown in the figure below.
- 3) Fix the lens fixing screw and CCD board fixing screw.

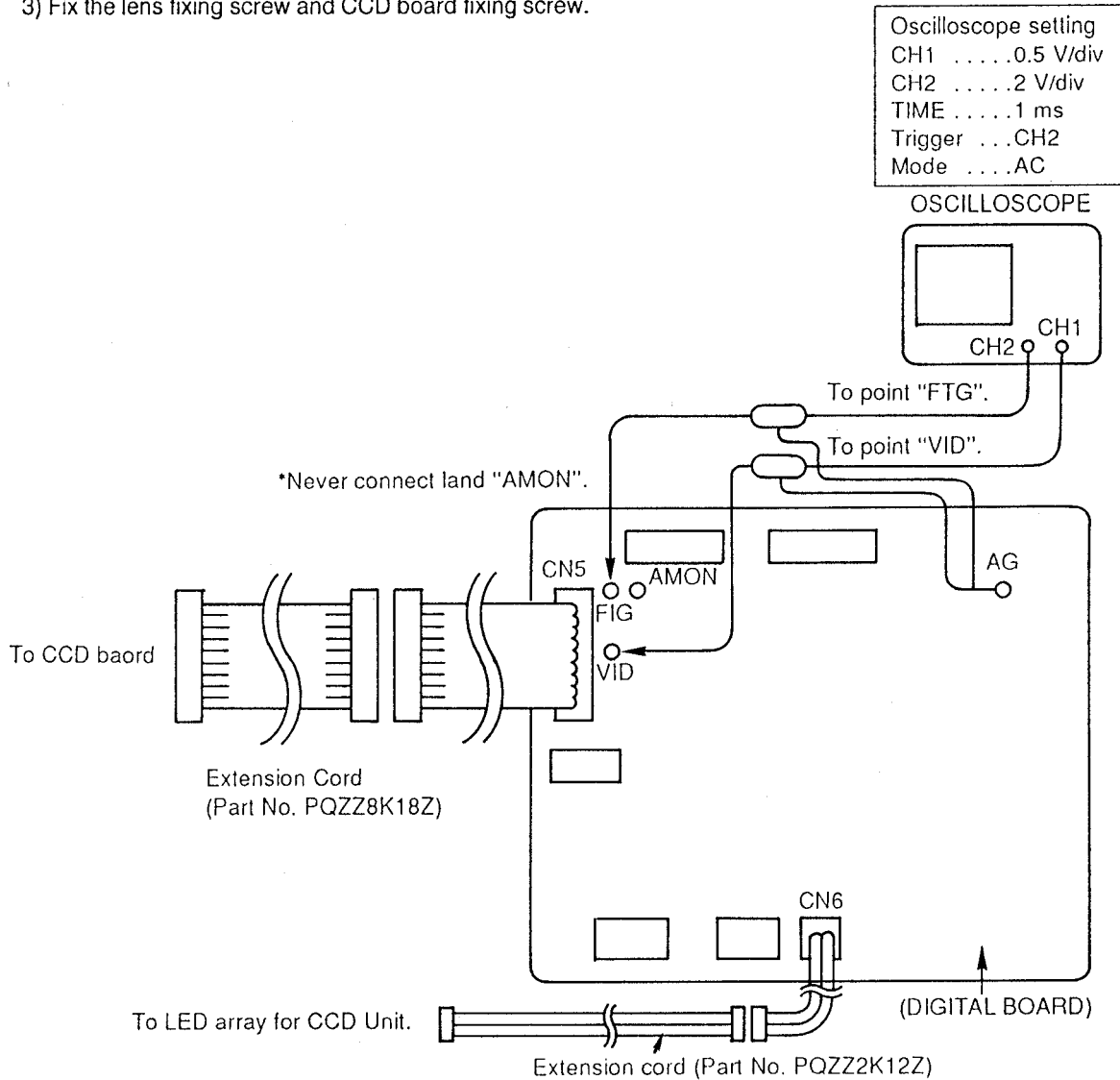
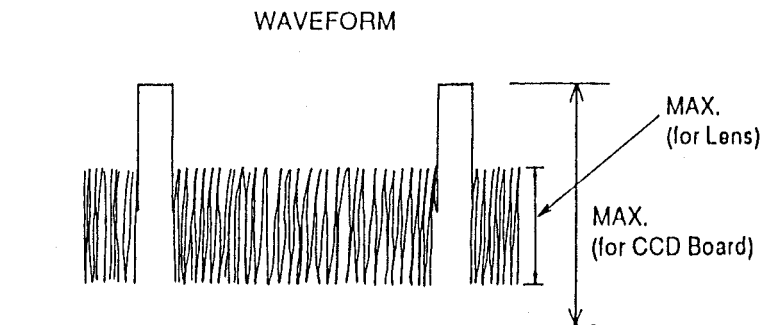
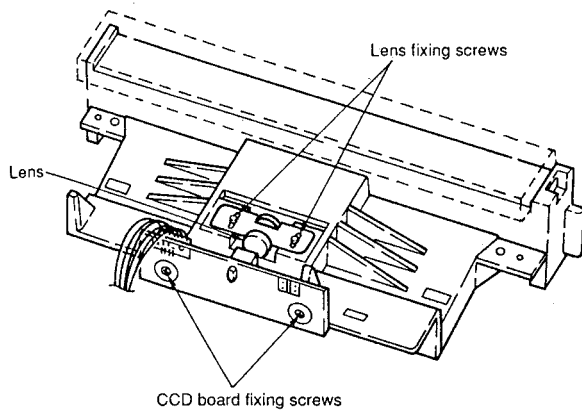


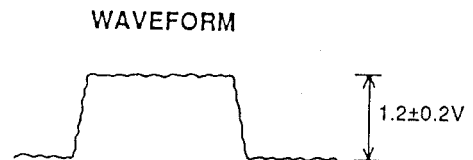
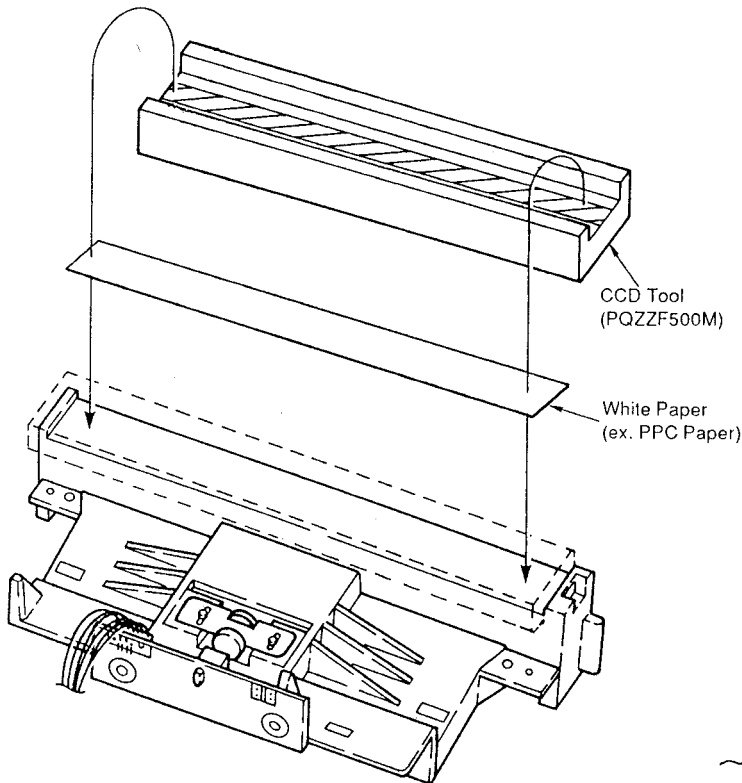
Fig. C



WHITE LEVEL ADJUSTMENT

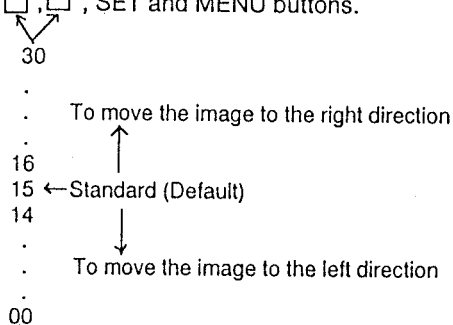
- 1) Remove the CCD TOOL from CCD unit
- 2) Attach the white paper on the CCD unit.
- 3) Attach the CCD TOOL on the CCD unit.
- 4) Adjust VR801 on the CCD board so that the waveform becomes $1.2 \pm 0.2V$.

Notes: 1. After the adjustment is finished, assemble the unit by reversing above procedure.
 2. Please adjust with covering topside of the lens by hands in order not to let in outdoor daylight.
 3. If you have no instrument to repair, trim off the chart on next page, then attach on the target glass. (This is a temporary treatment. You should use an instrument for this adjustment purpose, if you require an accurate repairment.)



5. DOCUMENT READ START POSITION ADJUSTMENT

- 1) Connect AC cord.
- 2) Copy the document, and confirm the read start position of the document.
- 3) If get out of position, adjust the read position.
- 4) Press the MENU button.
- 5) Press the #, 9, 0, 0, 0, * and 5, 6, 3 buttons.
- 6) Press the ☐, ☐, SET and MENU buttons.



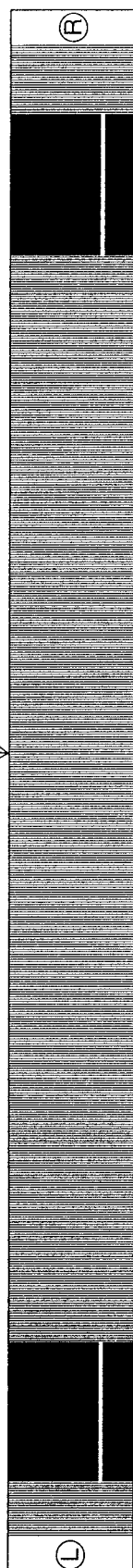
The starting position of reading shifts 1 mm as the number of changes.

(for white level adjustment)

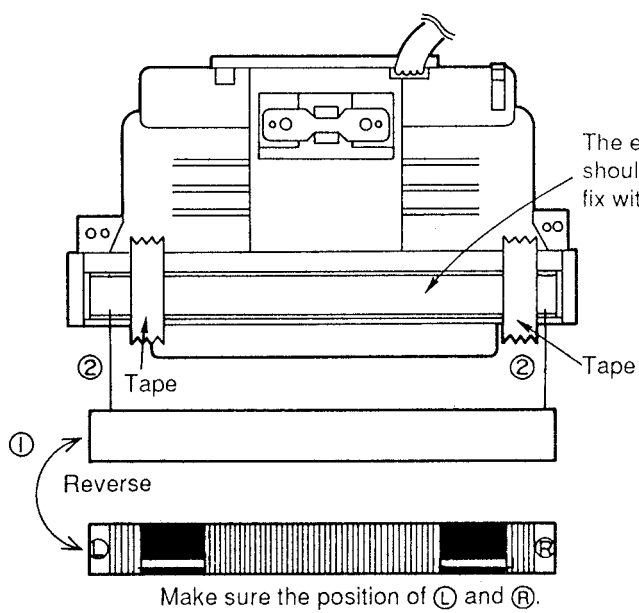
(for lens and CCD read position adjustment)



LED Array →
Side



← edge of the glass



The edge of glass and chart
should be put together, then
fix wite tape.

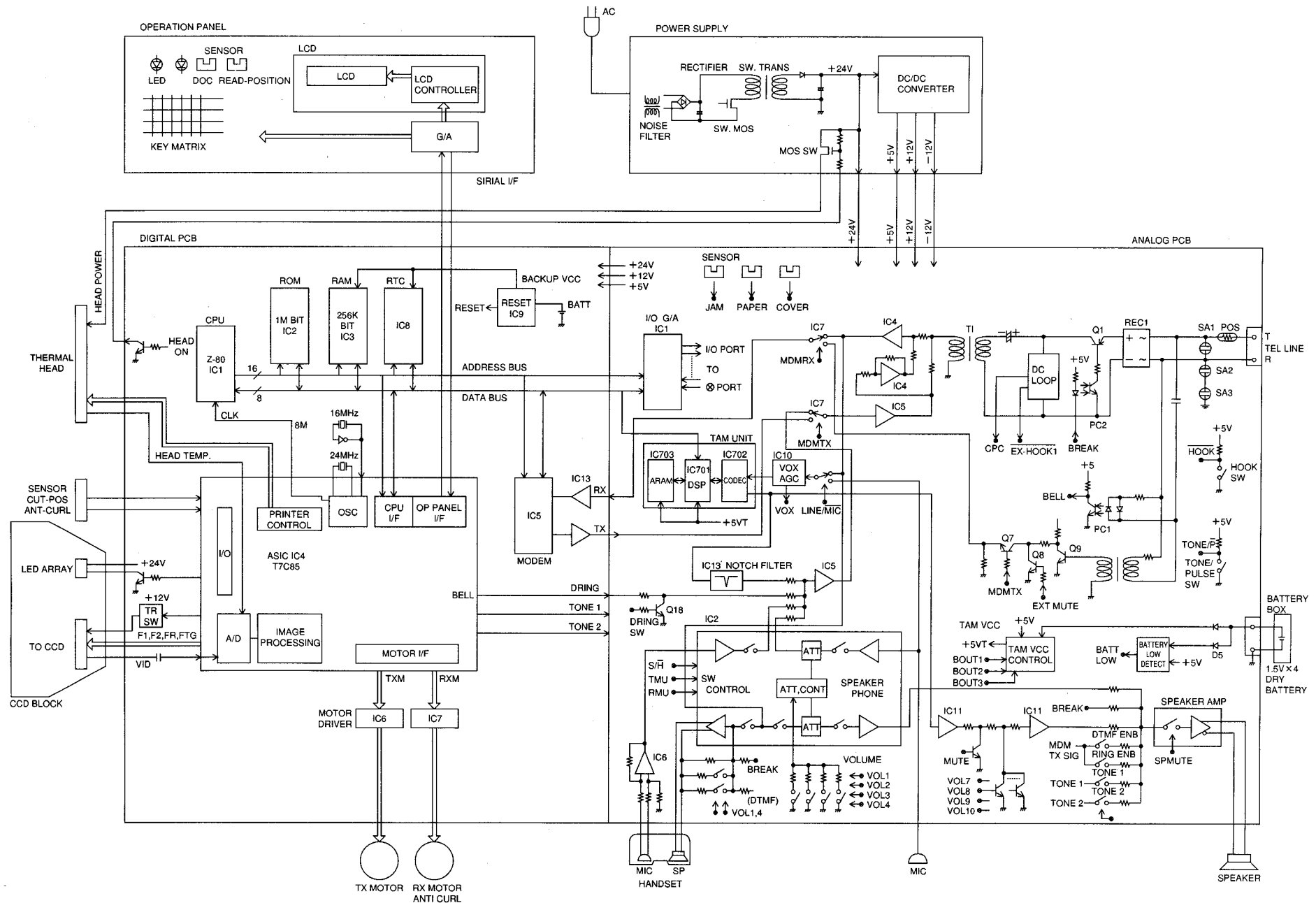
② Tape

② Tape

① Reverse

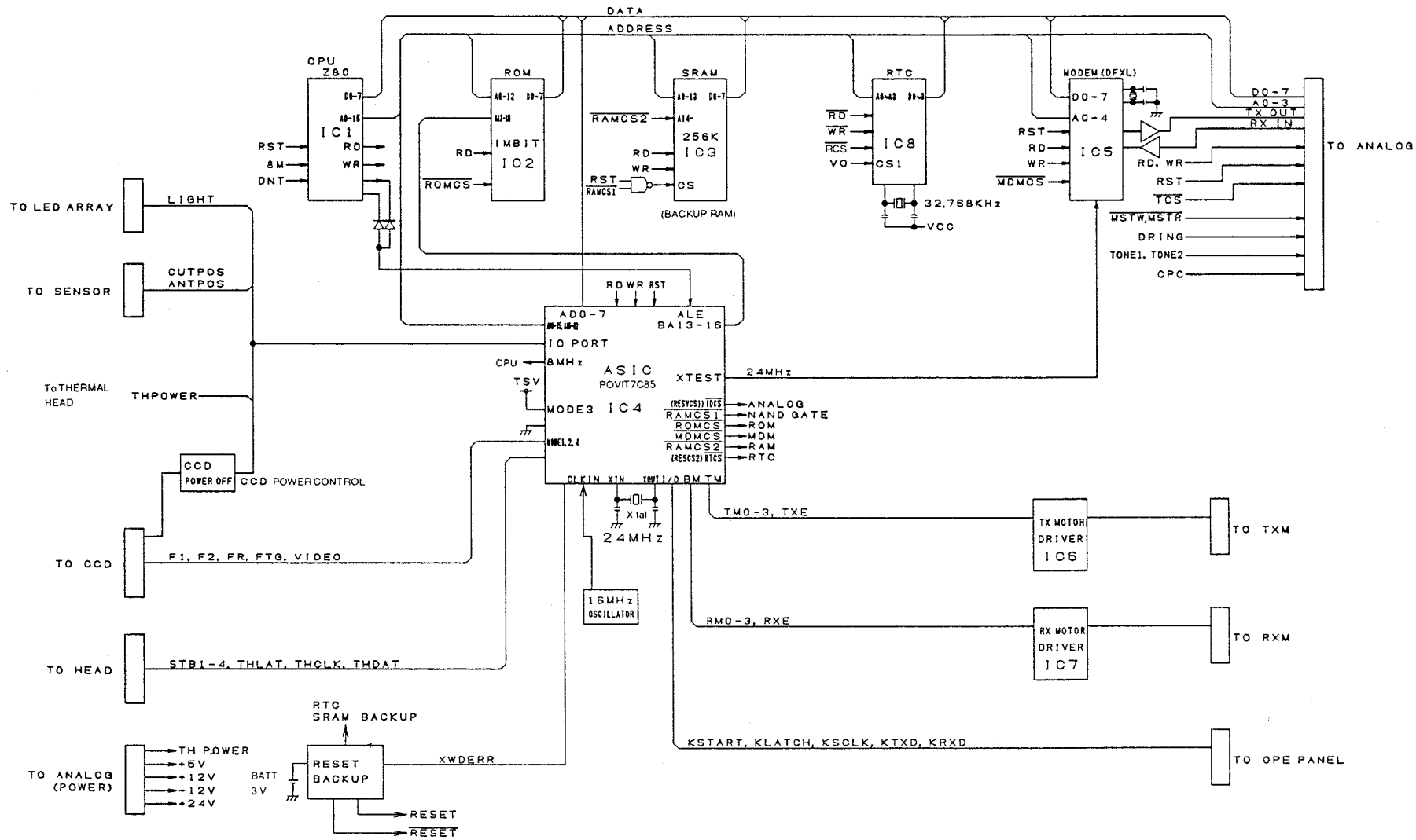
Make sure the position of L and R.

General Block Diagram

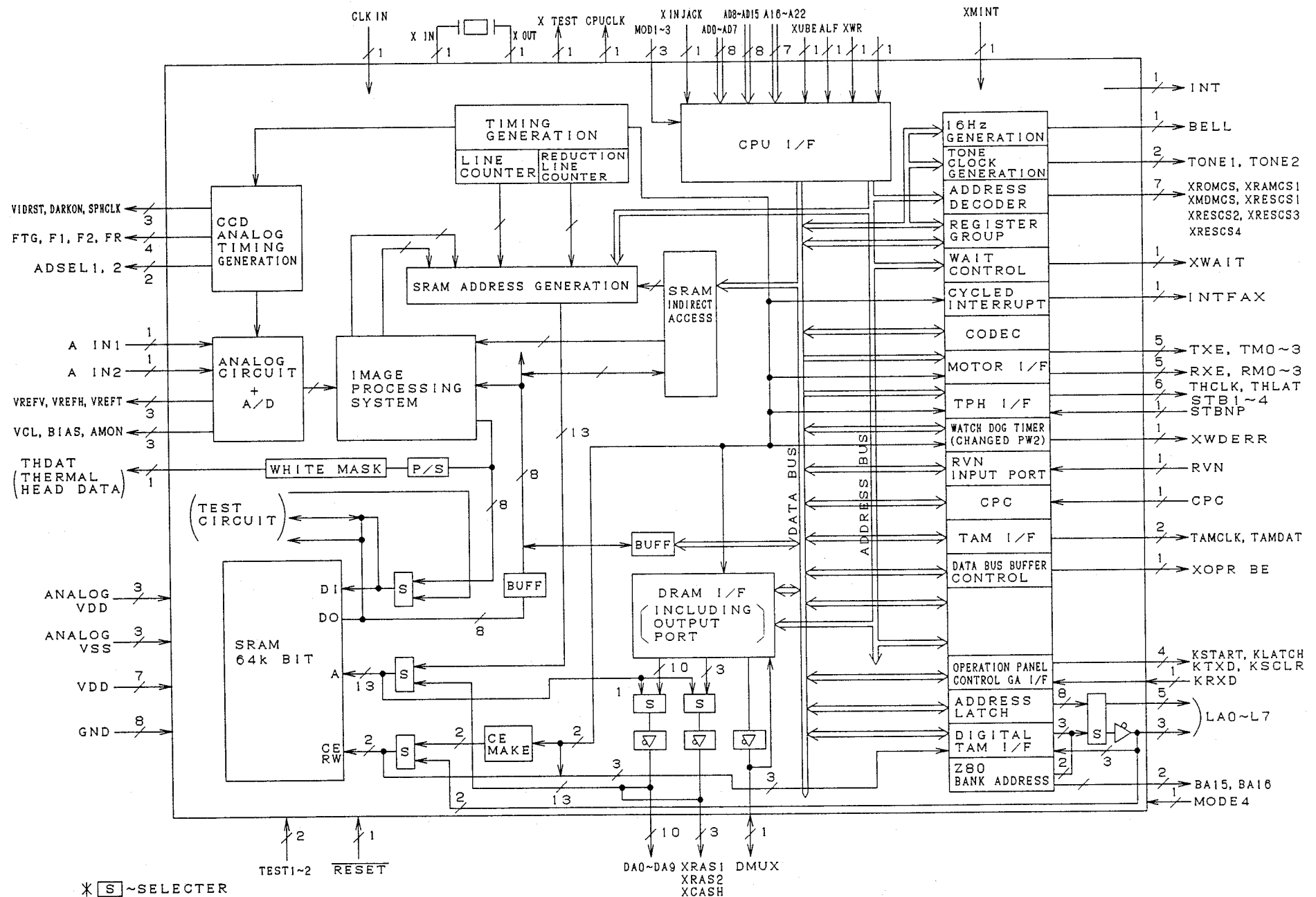


2. CONTROL SECTION

2-1. BLOCK DIAGRAM



IC4 Block Diagram



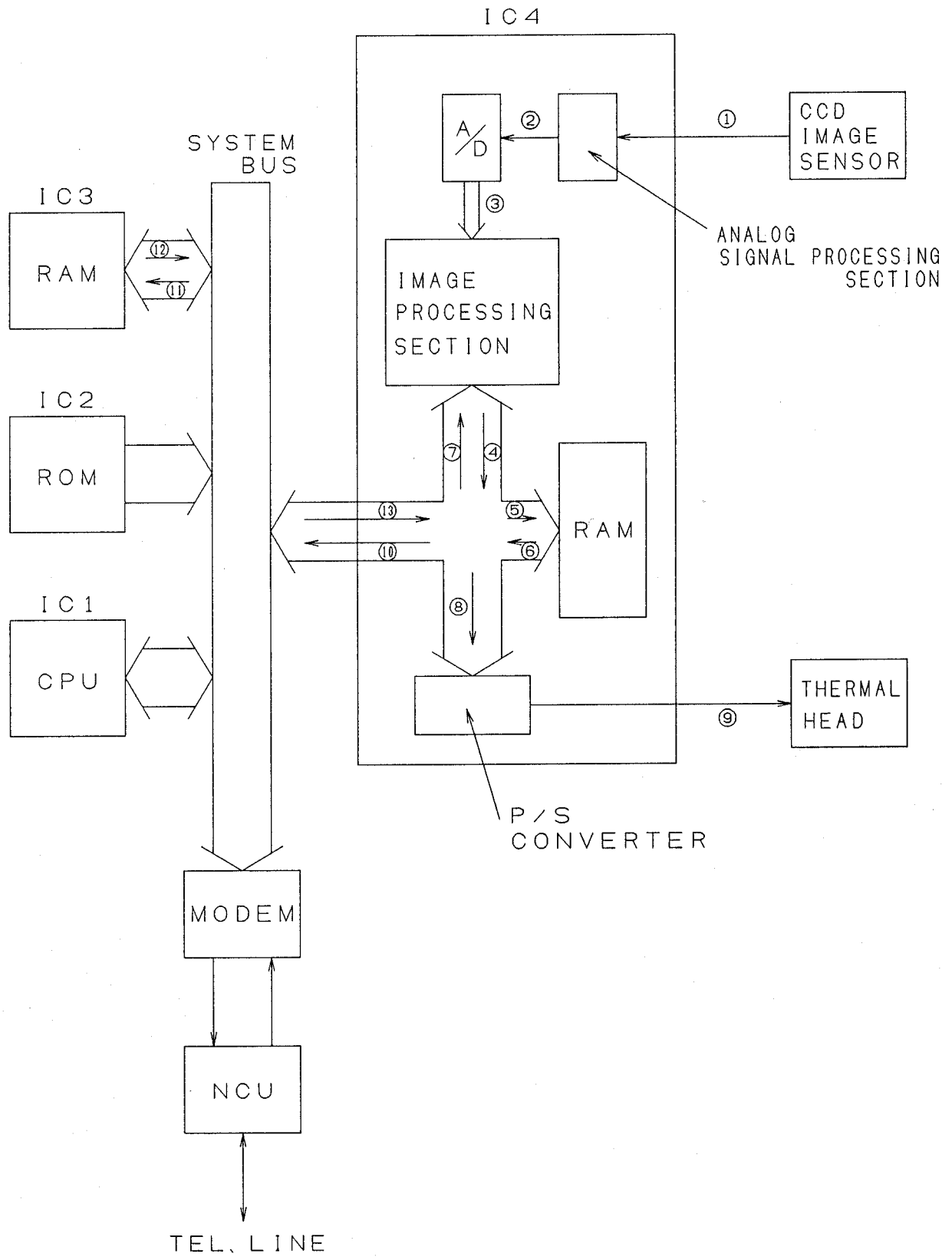
9) Explanation of Pin Distribution (IC4)

SIGNAL	NO.	I/O	Pu/Pd	Explanation
AD0	104	I/O	Pu	CPU (IC1) DATA BUS D0
AD1	103	I/O	Pu	CPU (IC1) DATA BUS D1
AD2	102	I/O	Pu	CPU (IC1) DATA BUS D2
AD3	101	I/O	Pu	CPU (IC1) DATA BUS D3
AD4	99	I/O	Pu	CPU (IC1) DATA BUS D4
AD5	98	I/O	Pu	CPU (IC1) DATA BUS D5
AD6	97	I/O	Pu	CPU (IC1) DATA BUS D6
AD7	96	I/O	Pu	CPU (IC1) DATA BUS D7
AD8	95	I	Pu	CPU (IC1) ADDRESS BUS A8
AD9	94	I	Pu	CPU (IC1) ADDRESS BUS A9
AD10	93	I	Pu	CPU (IC1) ADDRESS BUS A10
AD11	92	I	Pu	CPU (IC1) ADDRESS BUS A11
AD12	89	I	Pu	CPU (IC1) ADDRESS BUS A12
AD13	88	I	Pu	CPU (IC1) ADDRESS BUS A13
AD14	87	I	Pu	CPU (IC1) ADDRESS BUS A14
AD15	86	I	Pu	CPU (IC1) ADDRESS BUS A15
A16	112	I	Pu	CPU (IC1) ADDRESS BUS A0
A17	111	I	Pu	CPU (IC1) ADDRESS BUS A1
A18	110	I	Pu	CPU (IC1) ADDRESS BUS A2
A19	109	I	Pu	CPU (IC1) ADDRESS BUS A3
A20	107	I	Pu	CPU (IC1) ADDRESS BUS A4
A21	106	I	Pu	CPU (IC1) ADDRESS BUS A5
A22	150	I	Pu	CPU (IC1) ADDRESS BUS A6
XUBE	113	I	Pu	CPU (IC1) ADDRESS BUS A7
ALE	83	I	Pu	CPU (IC1) $\overline{\text{MREQ}}$
XWR	84	I	Pu	CPU (IC1) $\overline{\text{WR}}$
XRD	85	I	Pu	CPU (IC1) $\overline{\text{RD}}$
XWAIT	80	O		CPU (IC1) WAIT
MODE1	37	I		LOW FIXED
MODE2	38	I		LOW FIXED
MODE3	39	I		HIGH FIXED
XMINT	72	I		NOT USED
INT	79	O		CPU (IC1) $\overline{\text{INT}}$
XINTACK	78	I/O		RAM (IC3) BANK ADDRESS A14
XIN	57	I		SYSTEM CLOCK (24MHz) CONNECTION
XOUT	56	O		SYSTEM CLOCK (24MHz) CONNECTION
XTEST	59	O		MODEM (IC5) CLOCK (24MHz)
CPUCCLK	81	O		CPU (IC1) CLOCK (8MHz)
CLKIN	60	I		16MHz CLOCK INPUT
DA0	115	I		EXTENTION I/O (NOT USED)
DA1	116	I		EXTENTION I/O (NOT USED)
DA2	118	I/O		NOT USED
DA3	119	I/O		NOT USED
DA4	120	I/O		NOT USED
DA5	121	I/O		NOT USED
DA6	122	I/O		NOT USED
DA7	123	I		ANTI CURL POSITION SENSOR INPUT
DA8	124	I		CUTTER POSITION SENSOR INPUT
DA9	125	O		LED CONTROL OUTPUT
XRAS1	129	O		THERMAL HEAD POWER CONTROL OUTPUT
XRAS2	130	O		ROM (IC2) EXTENTION ADRESS (NOT USED)
XCASH	131	O		CCD POWER CONTROL OUTPUT
DMUX	128	I/O		EXTENTION I/O (NOT USED)

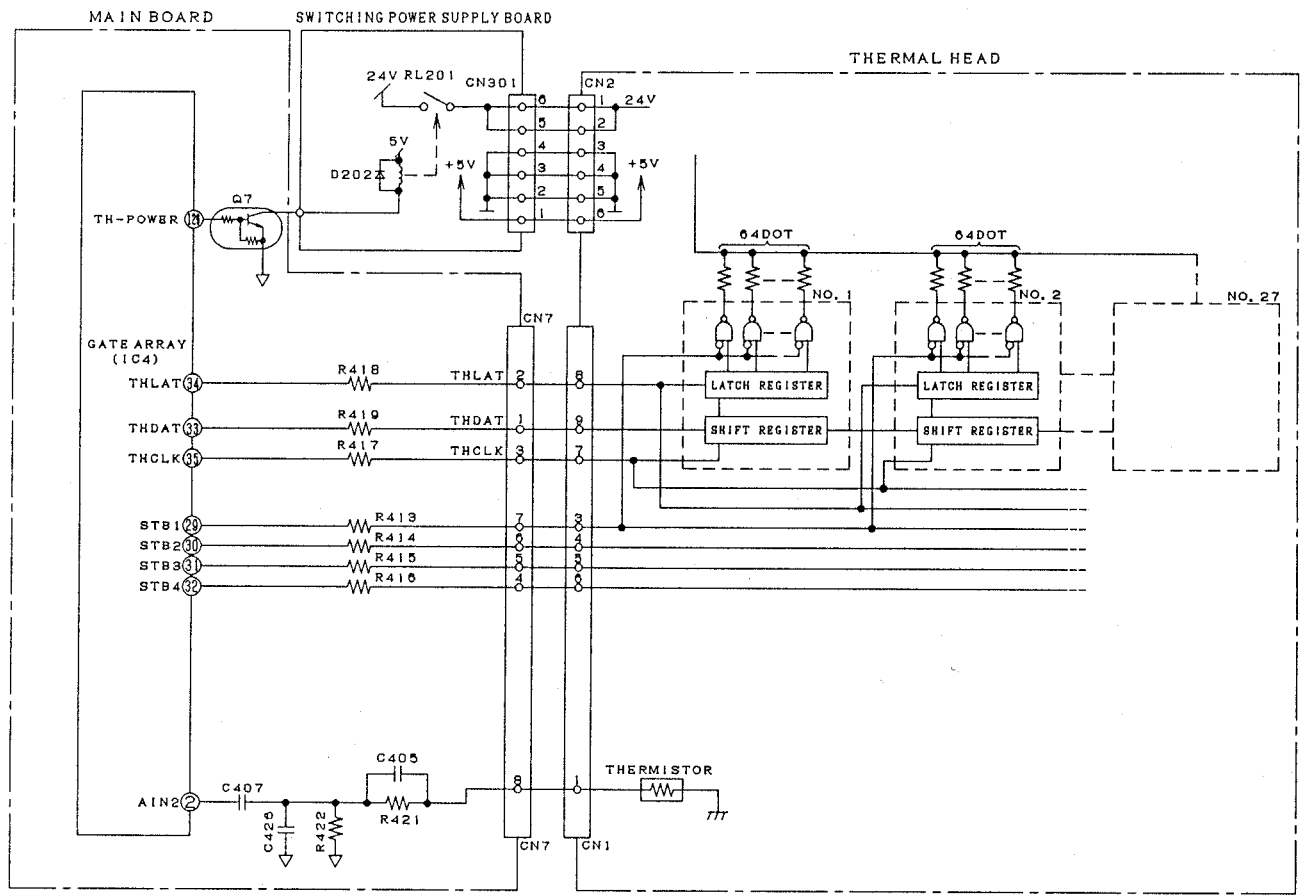
SIGNAL	PIN NO	I/O	Pu/Pd	Explanation
FTG	12	O		SH SIGNAL OUTPUT FOR CCD
F1	15	O		01 SIGNAL OUTPUT FOR CCD
F2	14	O		02 SIGNAL OUTPUT FOR CCD
FR	13	O		RS SIGNAL OUTPUT FOR CCD
VIDRST	11	O		CLAMP CONTROL SIGNAL FOR DC PLAY BACK
SPHCLK	10	O		IMAGE SIGNAL S/H CLOCK SIGNAL
DARKON	9	O		S/H CLOCK SIGNAL FOR LIGHT SCHIELD OUTPUT CLAMP
ADSEL1	8	O		CHANNEL SELECT SIGNAL FOR AIN 2 TERMINAL A/D INPUT
ADSEL2	7	O		CHANNEL SELECT SIGNAL FOR AIN 2 TERMINAL A/D INPUT
THDAT	33	O		RECORDED IMAGE OUTPUT TO THERMAL HEAD
THCLK	35	O		CLOCK OUTPUT FOR DATA TRANSFER TO THERMAL HEAD
THLAT	34	O		PULSE OUTPUT FOR DATA LATCH TO THERMAL HEAD
STB1	29	O		STROBE SIGNAL OUTPUT TO THERMAL HEAD
STB2	30	O		STROBE SIGNAL OUTPUT TO THERMAL HEAD
STB3	31	O		STROBE SIGNAL OUTPUT TO THERMAL HEAD
STB4	32	O		STROBE SIGNAL OUTPUT TO THERMAL HEAD
STBNP	28	I		THERMAL HEAD STROBE SIGNALS'POLARITY CONTROL SIGNAL
TM0	23	O		TRANSFER MOTOR A PHASE
TM1	24	O		TRANSFER MOTOR B PHASE
TM2	25	O		TRANSFER MOTOR/A PHASE
TM3	26	O		TRANSFER MOTOR/ B PHASE
TXE	27	O		TRANSFER MOTOR ENABLE SIGNAL
RM0(PS1)	17	O		TRANSFER MOTOR A PHASE
RM1(PS2)	16	O		TRANSFER MOTOR B PHASE
RM2(PS3)	20	O		TRANSFER MOTOR/A PHASE
RM3(PS4)	21	O		TRANSFER MOTOR/ B PHASE
RXE	22	O		TRANSFER MOTOR ENABLE SIGNAL
BELL	42	O		16Hz GENERATES
TONE1	43	O		TONE OUTPUT, FOR BEEP•KEY TONE•ALARM
TONE2	44	O		TONE OUTPUT, FOR BEEP•KEY TONE•ALARM
XROMCS	74	O		ROM (IC2) CHIP SELECT
XRAMCS1	75	O		RAM (IC3) CHIP SELECT
XMDMCS	73	O		MODEM (IC5) CHIP SELECT
XRESCS	70	O		ANALOG BOARD (IC1) CHIP SELECT
XRESCS2	69	O		RTC (IC8) CHIP SELECT
XRESCS3	68	O		CHIP SELECT FOR SPARE (NOT USED)
XRESCS4	67	O		CHIP SELECT FOR SPARE (NOT USED)
XWDERR	114	O		WATCHED ERROR OUTPUT SIGNAL
RVN(PS5)	40	I		NOT USED
CPC	41	I		NOT USED
TAMCLK	62	O		NOT USED
TAMDAT	63	O		NOT USED
XOPRBE	71	O		NOT USED
KSTART	136	O		OPERATION PANEL CONTROL GA/F
KLATCH	135	O		OPERATION PANEL CONTROL GA/F
KXCLK	134	O		OPERATION PANEL CONTROL GA/F
KTXD	133	O		OPERATION PANEL CONTROL GA/F
KRXD	132	O		OPERATION PANEL CONTROL GA/F
LA0(BA13)	53	O		ROM (IC2) BANK ADRESS A13
LA1(BA14)	52	O		ROM (IC2) BANK ADRESS A14

SIGNAL	PIN NO	I/O	Pu/Pd	Explanation
LA2(XCS)	51	O		NOT USED
LA3(DOUT)	50	O		NOT USED
LA4(CLK)	49	O		NOT USED
LA5(DIN)	48	I/O		NOT USED
LA6(RQST)	47	I/O		NOT USED
LA7(DONE)	46	I/O		NOT USED
MODE4	61	I		HIGH FIXED
BA15	77	O		ROM (IC2) BANK ADDRESS A15
BA16	76	O		ROM (IC2) BANK ADDRESS A16
XRESET	66	I		SYSTEM RESET SIGNAL INPUT
TEST1	64	I		LOW FIXED
TEST2	65	I		LOW FIXED
AIN1	4			CCD IMAGE SIGNAL INPUT
AIN2	2			THERMISTER TEMPARATURE WATCH INPUT
VCL	5			ANALOG PART STANDARD VOLTAGE SIGNAL OUTPUT/ INPUT TERMINAL (IN RESISTOR, POSSIBLE TO INPUT.)
AMON	3			ANALOG SIGNAL MONITOR TERMINAL
BIAS	143			A/D CONVERTER'S BIAS VOLTAGE OUTPUT, CONNECT BYPASS CONDENSOR
VREFB	137			A/C CONVERTER'S ZERO STANDART VOLTAGE OUTPUT
VREFH	142			A/D CONVERTER'S 1/2 FULL SCALE VOLTAGE OUTPUT, CONNECT BYPASS CONDENSOR
VREFT	140			A/C CONVERTER'S FULL SCALE VOLTAGE OUTPUT, CONNECT BYPASS CONDENSOR
VDDA	141			A/D CONVERTER VDD (+5V)
VSSA	144			A/D CONVERTER VSS (GND)
VDDDB	6			S/H, CLAMP, AGC VDD (+5V)
VSSB	1			S/H, CLAMP, AGC VSS (GND)
VDDC	139			A/D CONVERTER'S VDD (+5V) FOR REFERENCE
VSSC	138			A/C CONVERTER'S VSS (GND) FOR REFERENCE
VDD	18			Power Sorce (+5V)
VDD	45			Power Sorce (+5V)
VDD	54			Power Sorce (+5V)
VDD	82			Power Sorce (+5V)
VDD	90			Power Sorce (+5V)
VDD	117			Power Sorce (+5V)
VDD	126			Power Sorce (+5V)
VSS	19			Power Sorce (GND)
VSS	36			Power Sorce (GND)
VSS	55			Power Sorce (GND)
VSS	58			Power Sorce (GND)
VSS	91			Power Sorce (GND)
VSS	100			Power Sorce (GND)
VSS	108			Power Sorce (GND)
VSS	127			Power Sorce (GND)

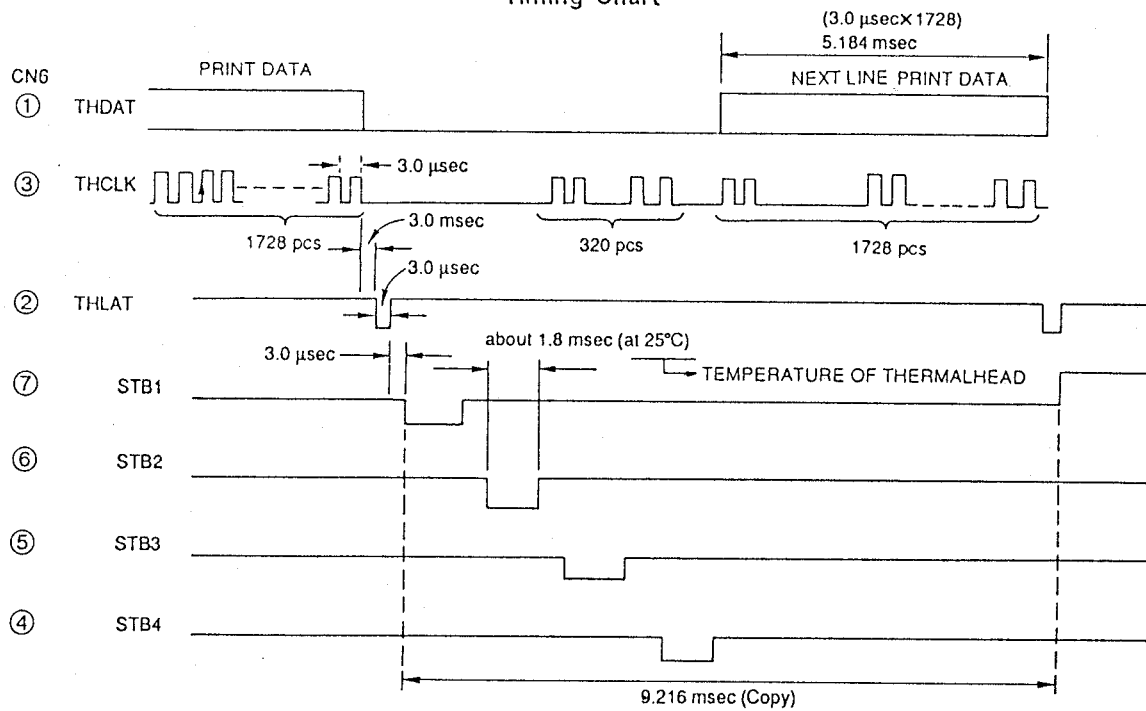
Block Diagram



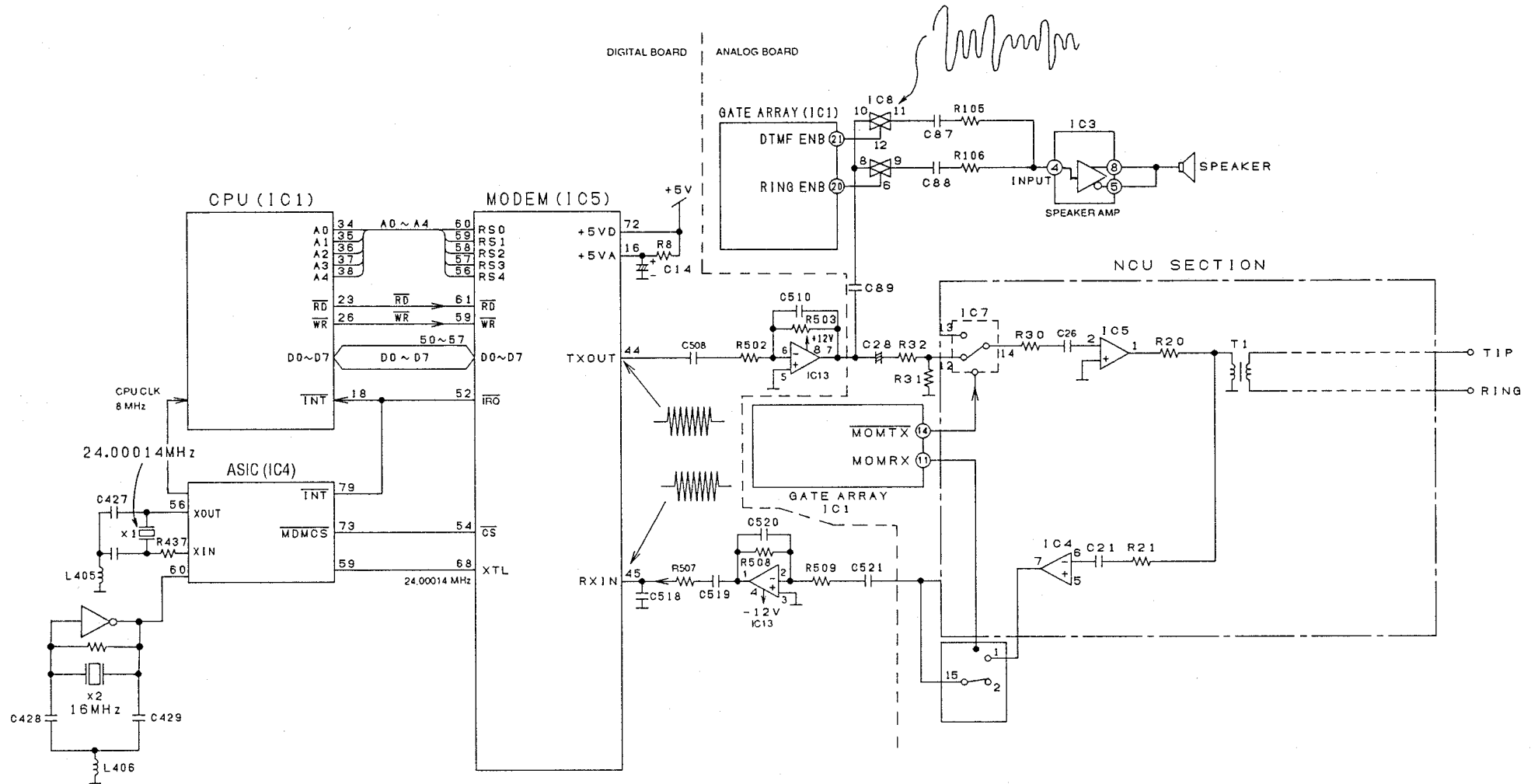
Circuit Diagram



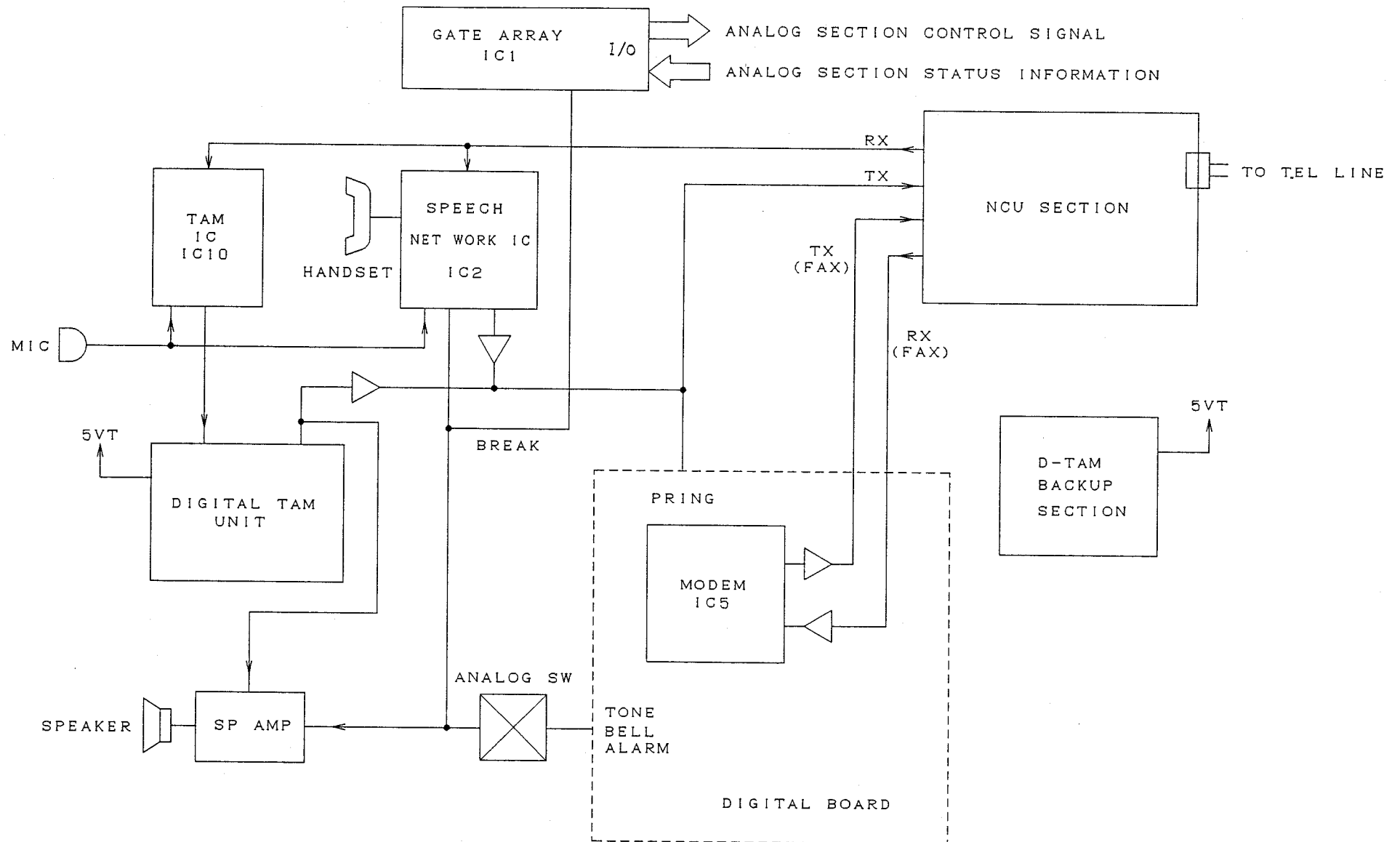
Timing Chart



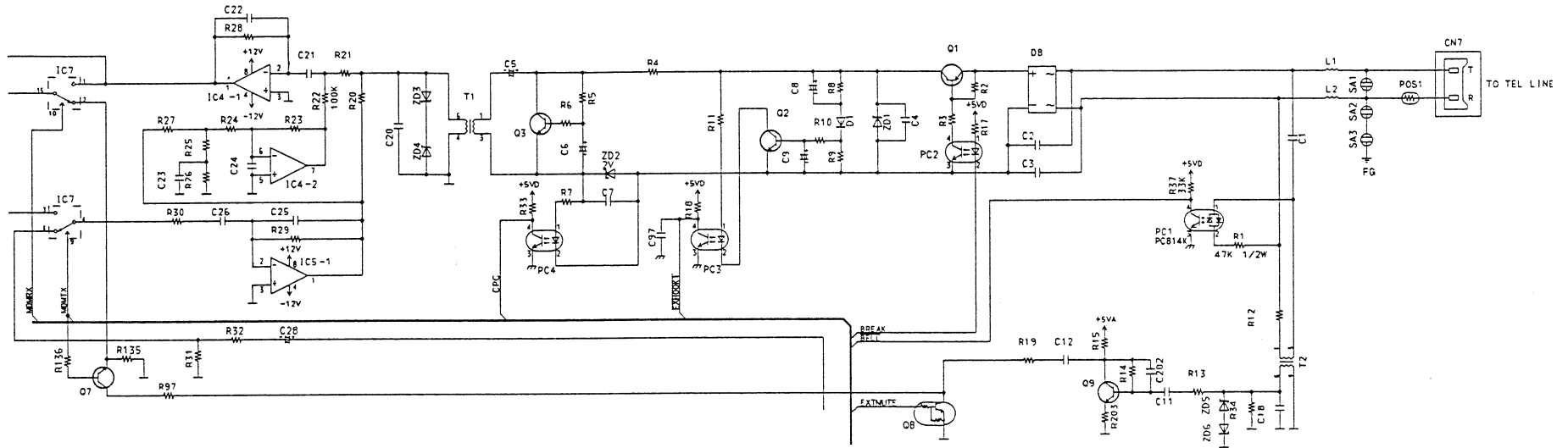
Circuit Diagram



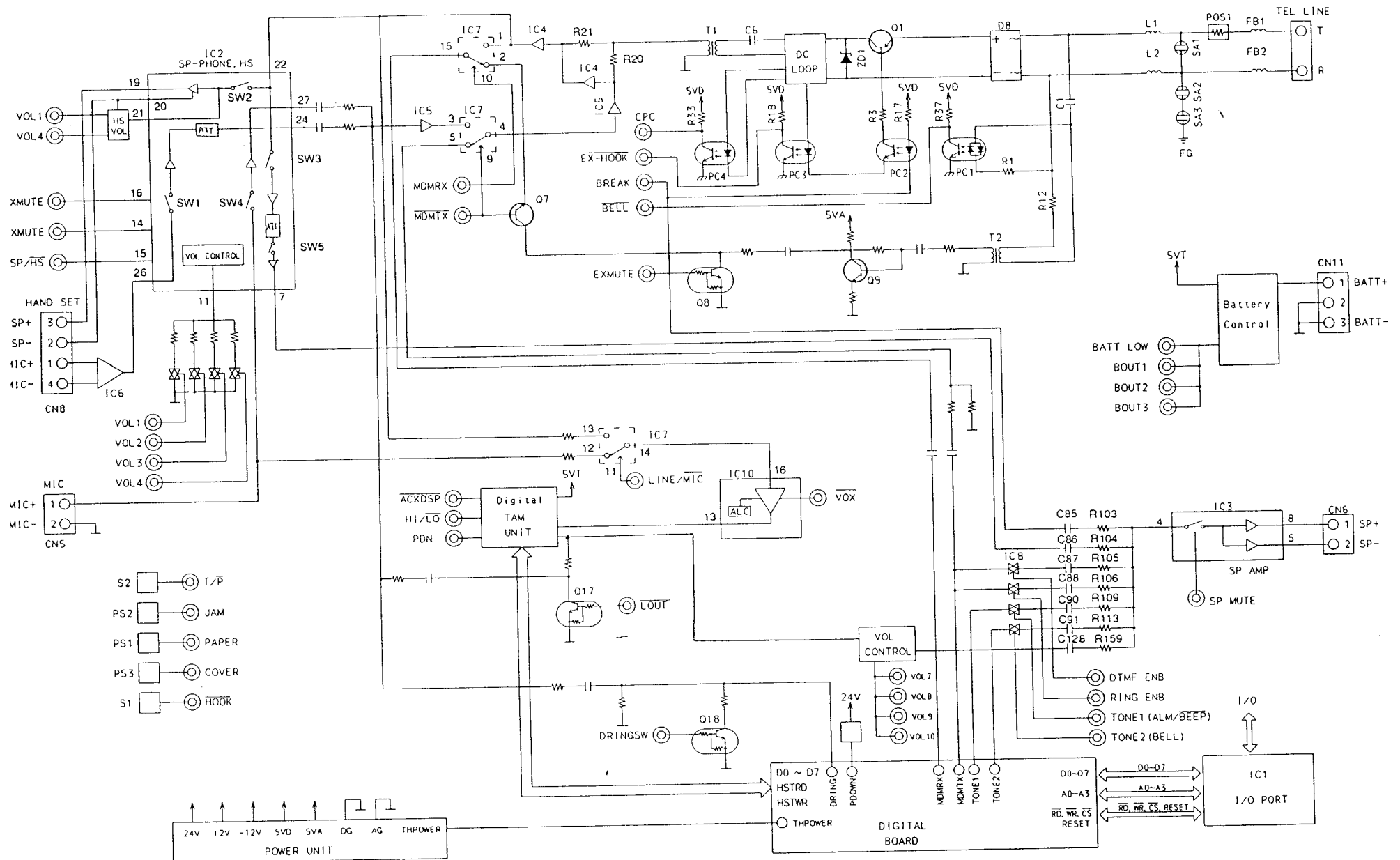
【ANALOG UNIT BLOCK DIAGRAM】



Circuit Diagram



Circuit Diagram



8. DIGITAL TAM BACK UP CIRCUIT

1) Function

This unit has a 6.0 volt battery (1.5 volt×4), which works for the digital TAM unit back up. The battery keeps the digital TAM unit's OGM, ICM and memo recording message in memory if the power is turned off.

2) Circuit Operation

(1) Power Supply

AC power source turns on, +5 V is supplied to the digital TAM unit as the following path. (Depending on I/O port IC [IC1], the signal of Bout 2 is controlled by H.)

Power Board→Q24→D•TAM

AC power source turns off, +5 V is supplied to the digital TAM unit as the following path. (Reset signal is inputted by reset circuit, the signal of Bout 2 is controlled by L.)

Battery→CN11→D5→R172→Q10→R183→D•TAM

When Back up is necessary, Bout 1 is controlled by H depending on IC1.

Situation		Bout 1	Bout 2
Power source ON	No message in TAM	0	1
Power source ON	Messages in TAM	1	1
Power source OFF	—	0	0

1: High Level
0: Low Level

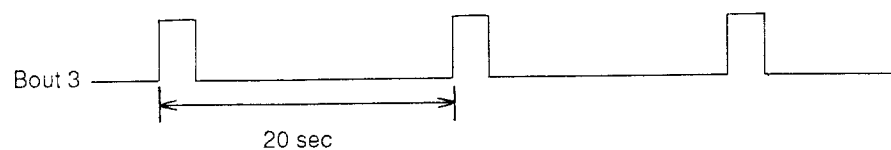
(2) Battery voltage detection

When detecting battery voltage, to control Bout 3=H depending on IC1. After that to confirm the Batt. Low signal by IC1.

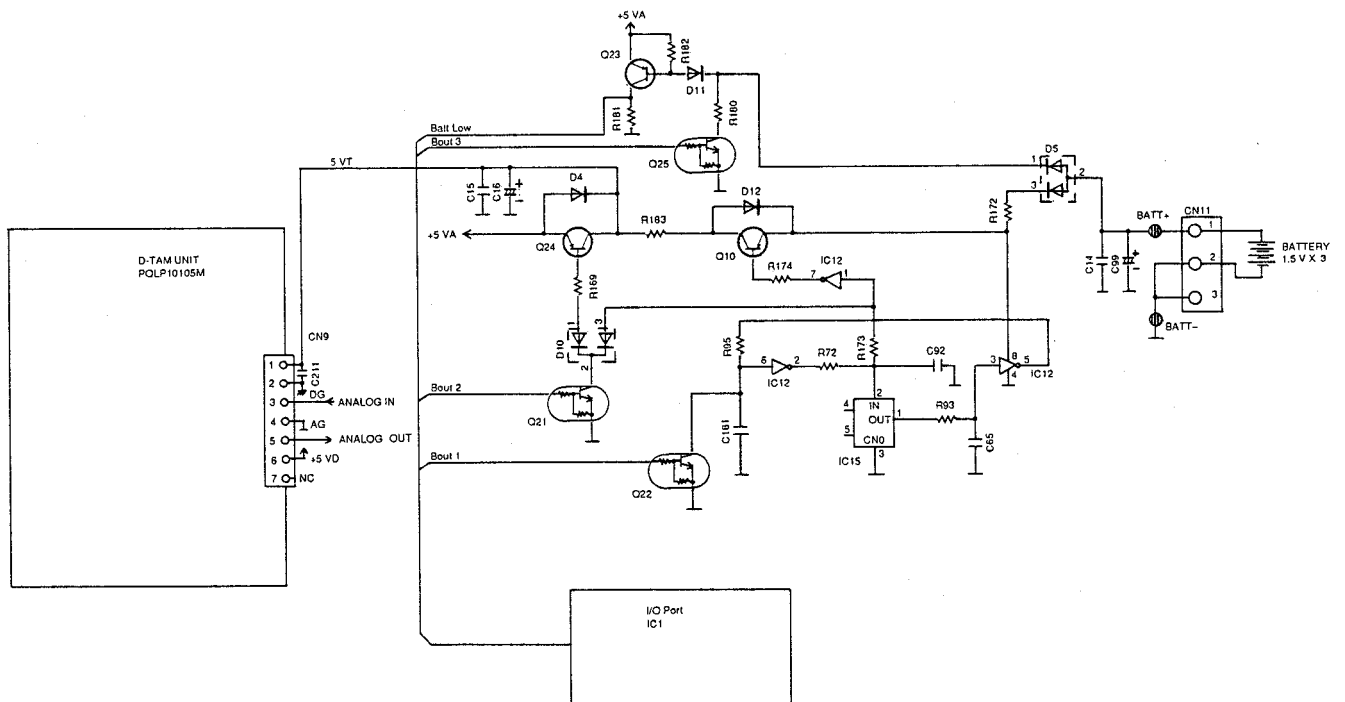
	Bout 3 Output	Batt Low Input	Description
Normal	0	—	—
Battery voltage Check	1	0	Full
	1	1	Empty

1: High Level
0: Low Level

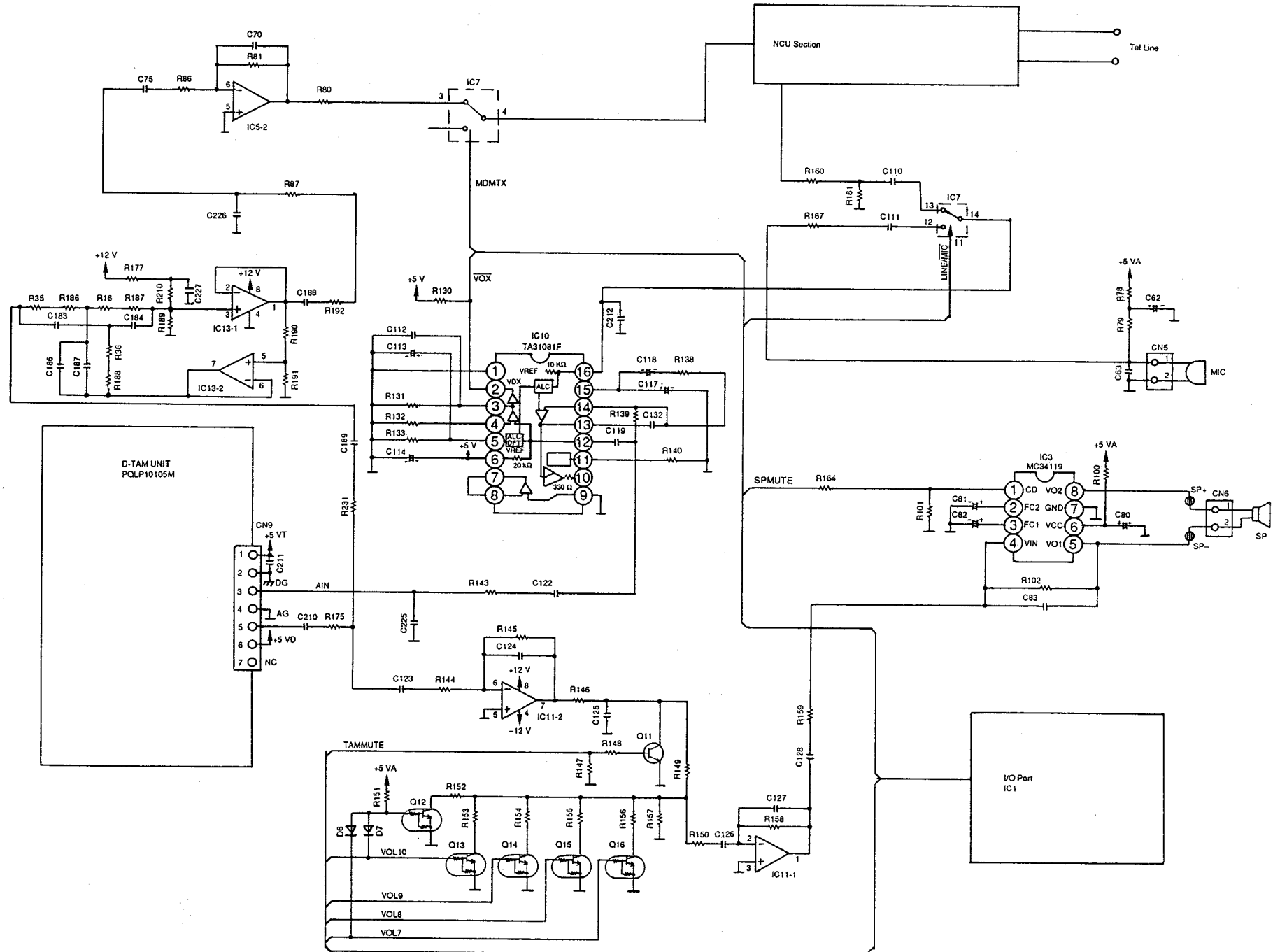
Battery Check (Bout 3=1) executes about 20 second interval.

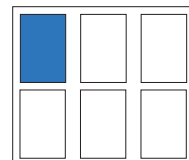


Circuit Diagram

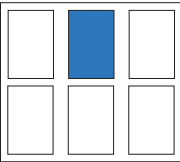


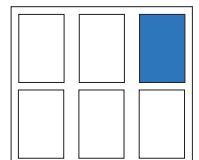
Circuit Diagram





A horizontal number line with tick marks at every integer from 6 to 12. The numbers 6, 7, 8, 9, 10, 11, and 12 are labeled above their respective tick marks.





E

F

G

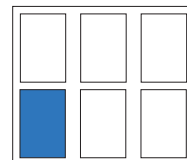
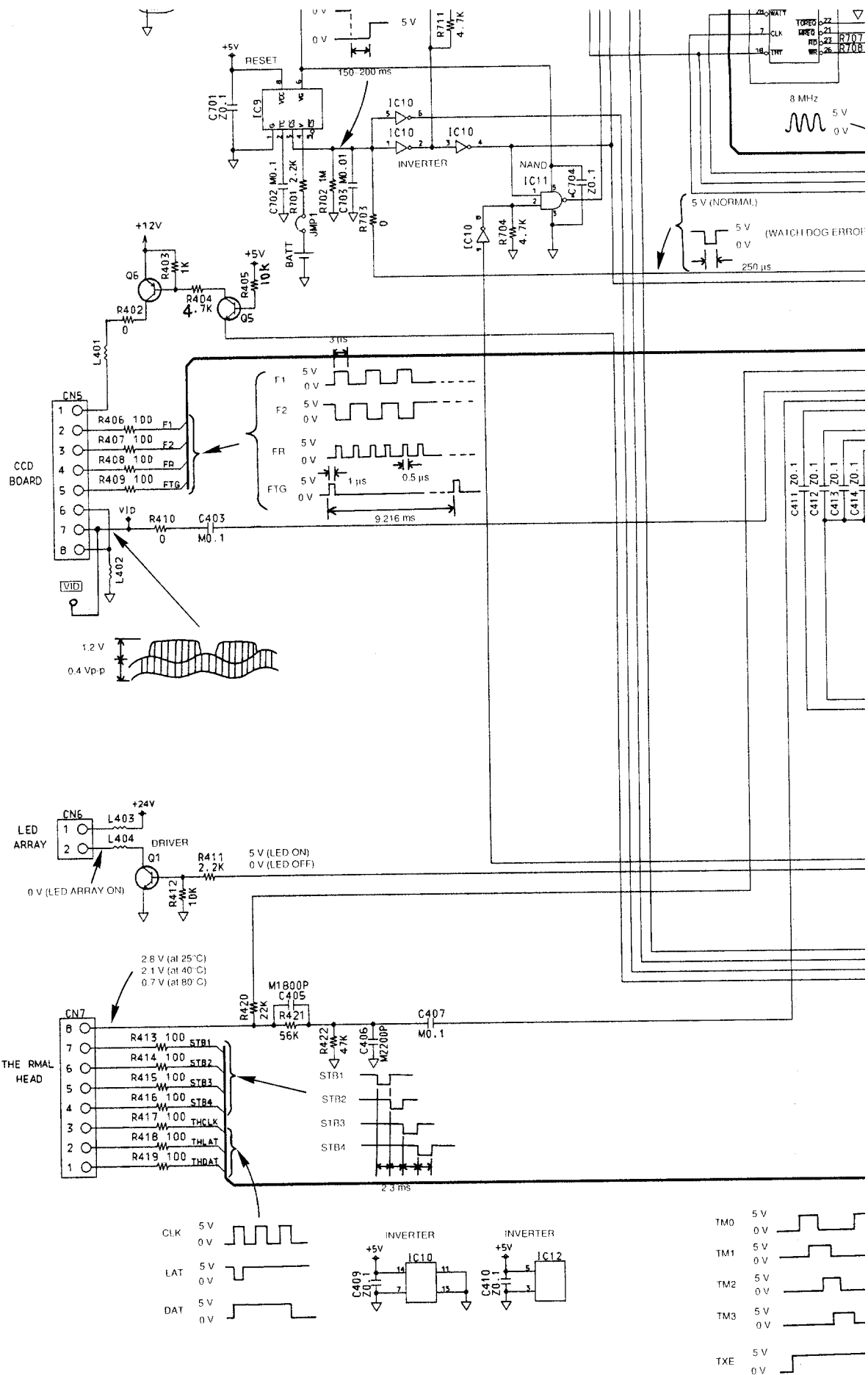
H

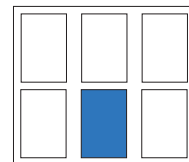
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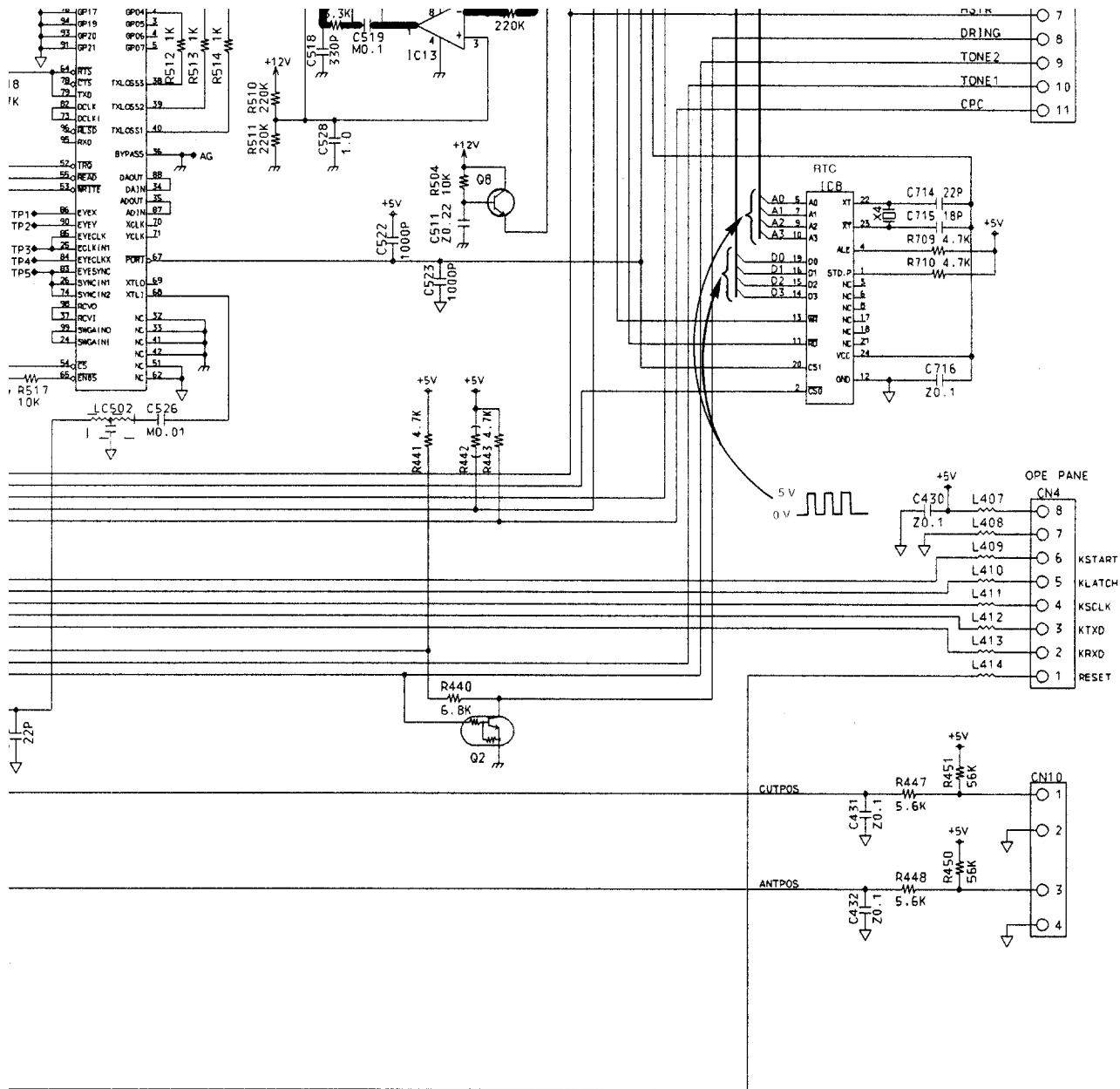
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K

L





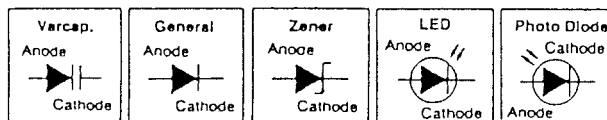


FOR SCHEMATIC DIAGRAM

Notes:

1. DC voltage measurements are taken with oscilloscope or tester from ground.
2. The schematic diagram and circuit board may be modified at any time with the development of new technology.

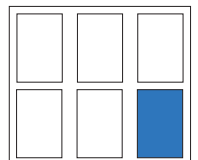
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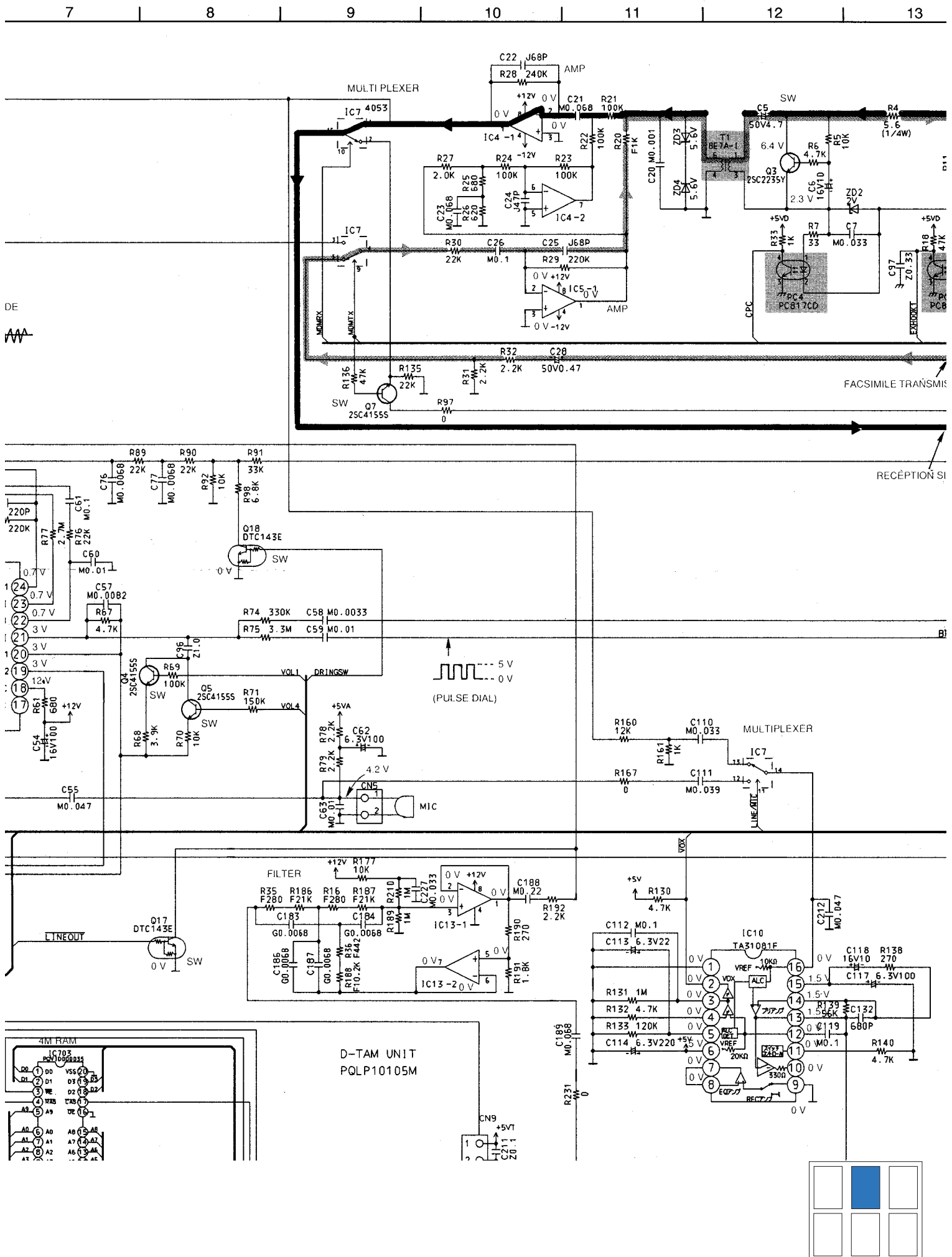
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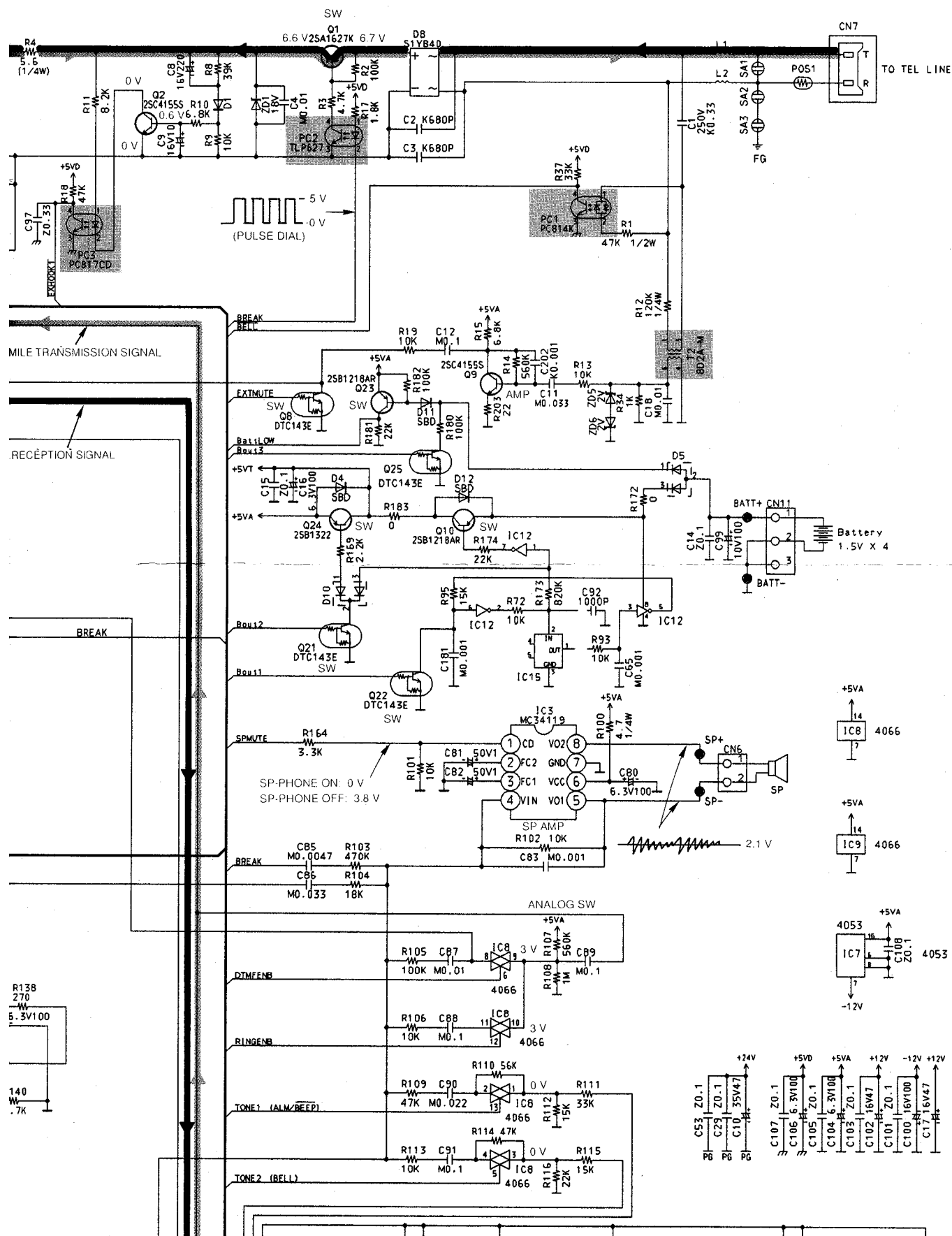
Important safety notice

The shaded area on this schematic diagram incorporates special features important for protection from fire and electrical shock hazards. When servicing, it is essential that only manufacturer's specified parts can be used for the critical components in the shaded areas of the schematic.



SCHEMATIC DIAGRAM (ANALOG CIRCUIT)





E

F

G

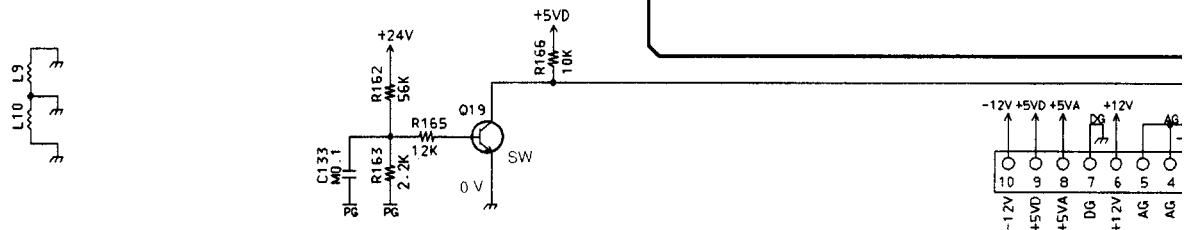
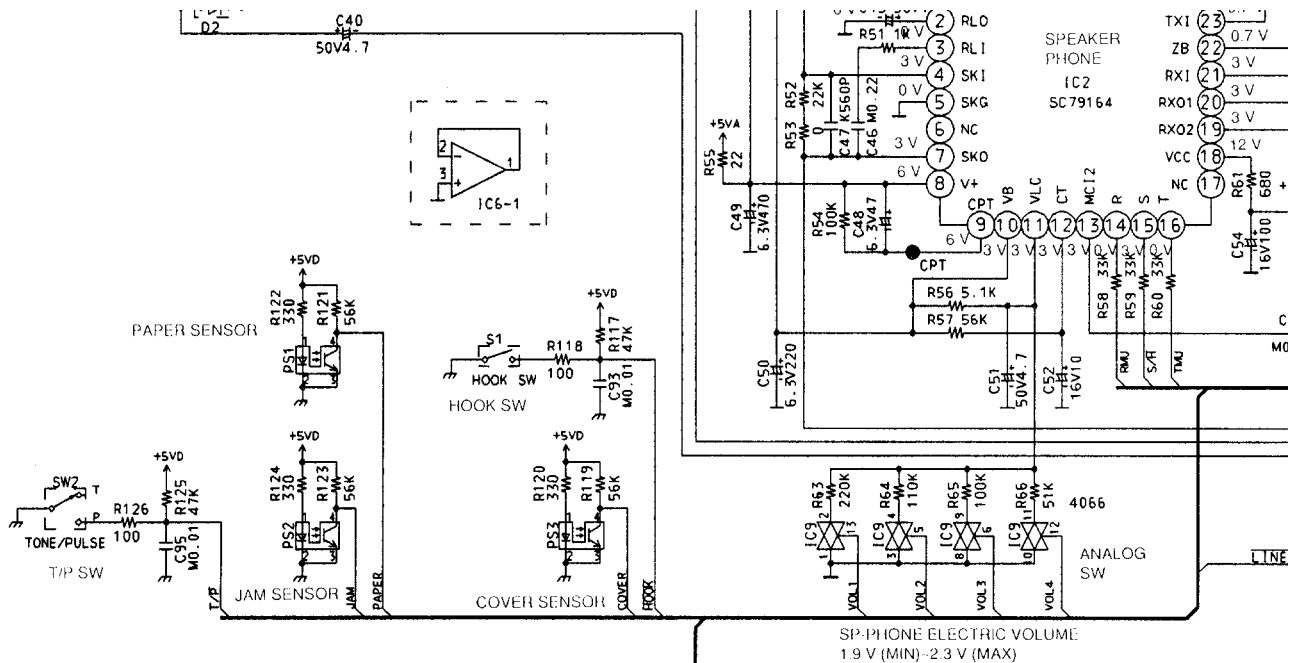
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I

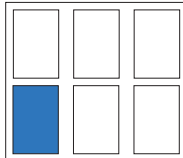
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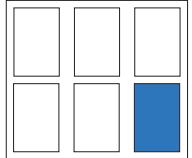
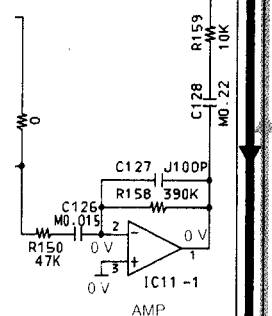
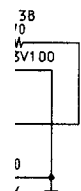
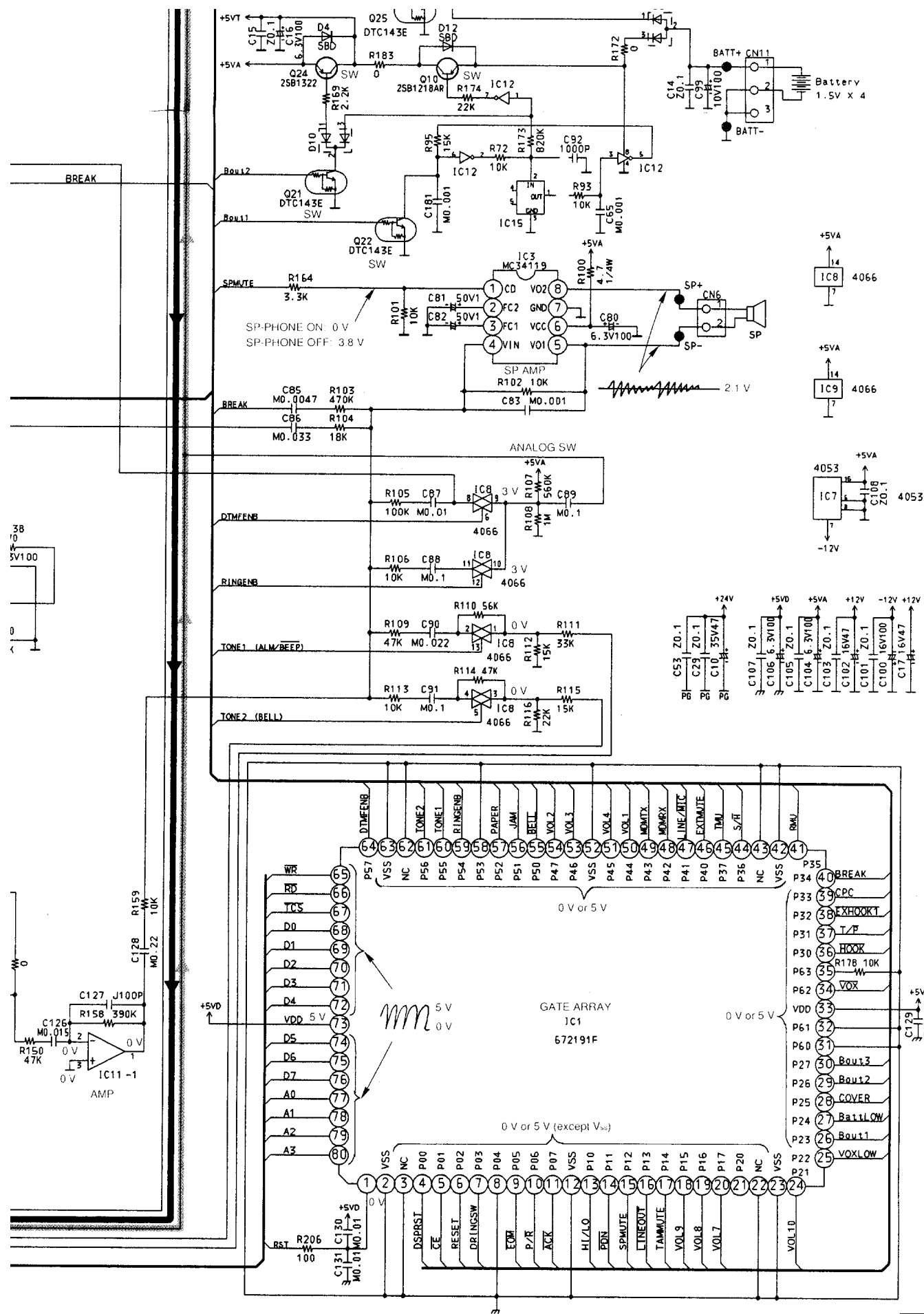
K

L



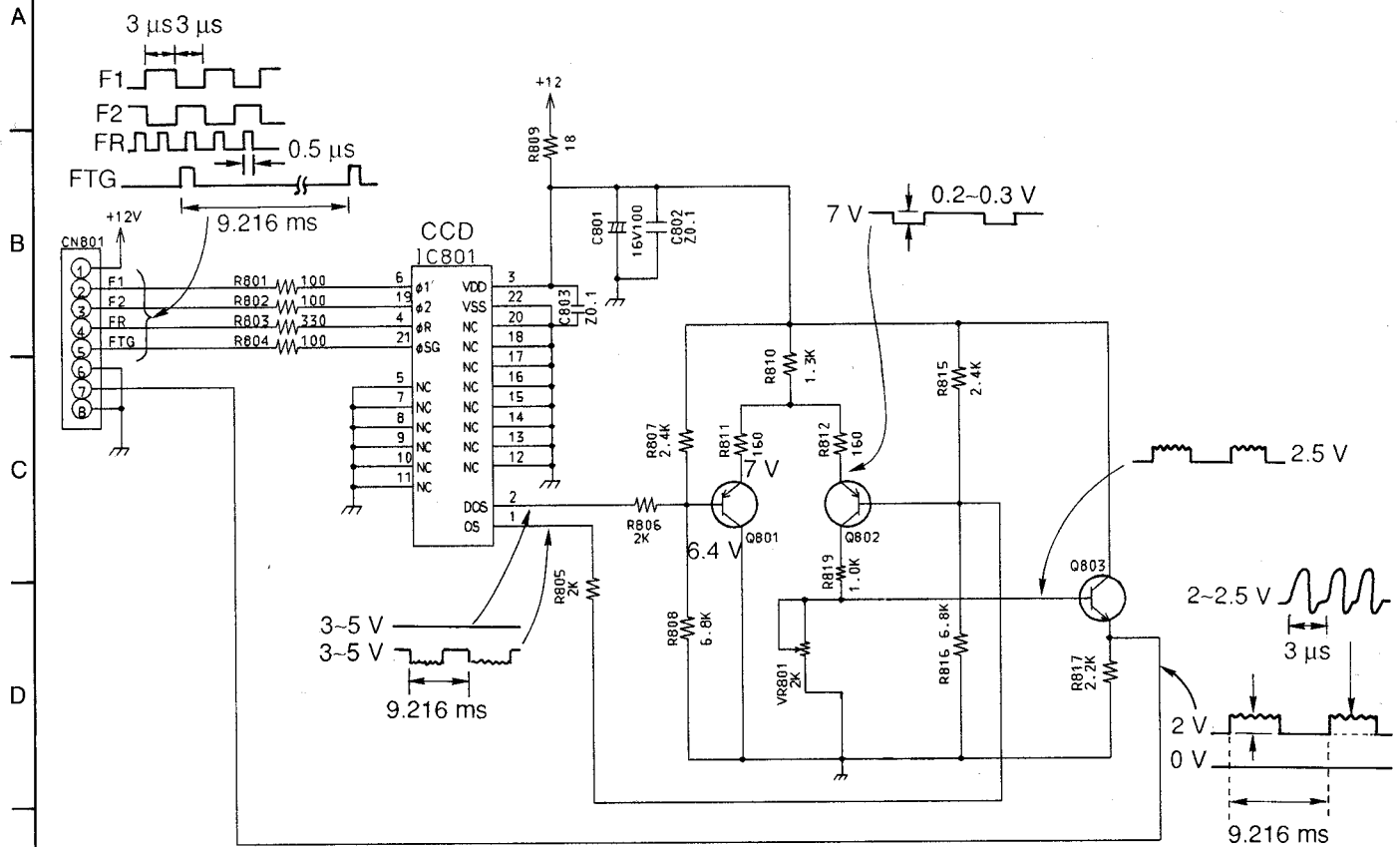
TO POWER BOARD





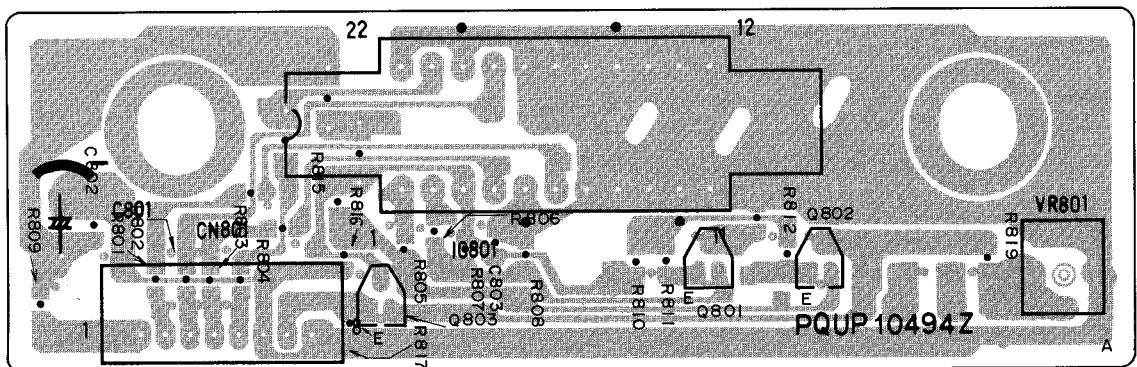
SCHEMATIC DIAGRAM AND PRINT

CCD CIRCUIT



※Waveform, voltage are "COPY", "SEND", CCD/LED TEST mode.
All voltage is 0 V at standby mode.

CCD BOARD (COMPONENT VIEW)



PRINTED CIRCUIT BOARD (CCD/LCD)

7

8

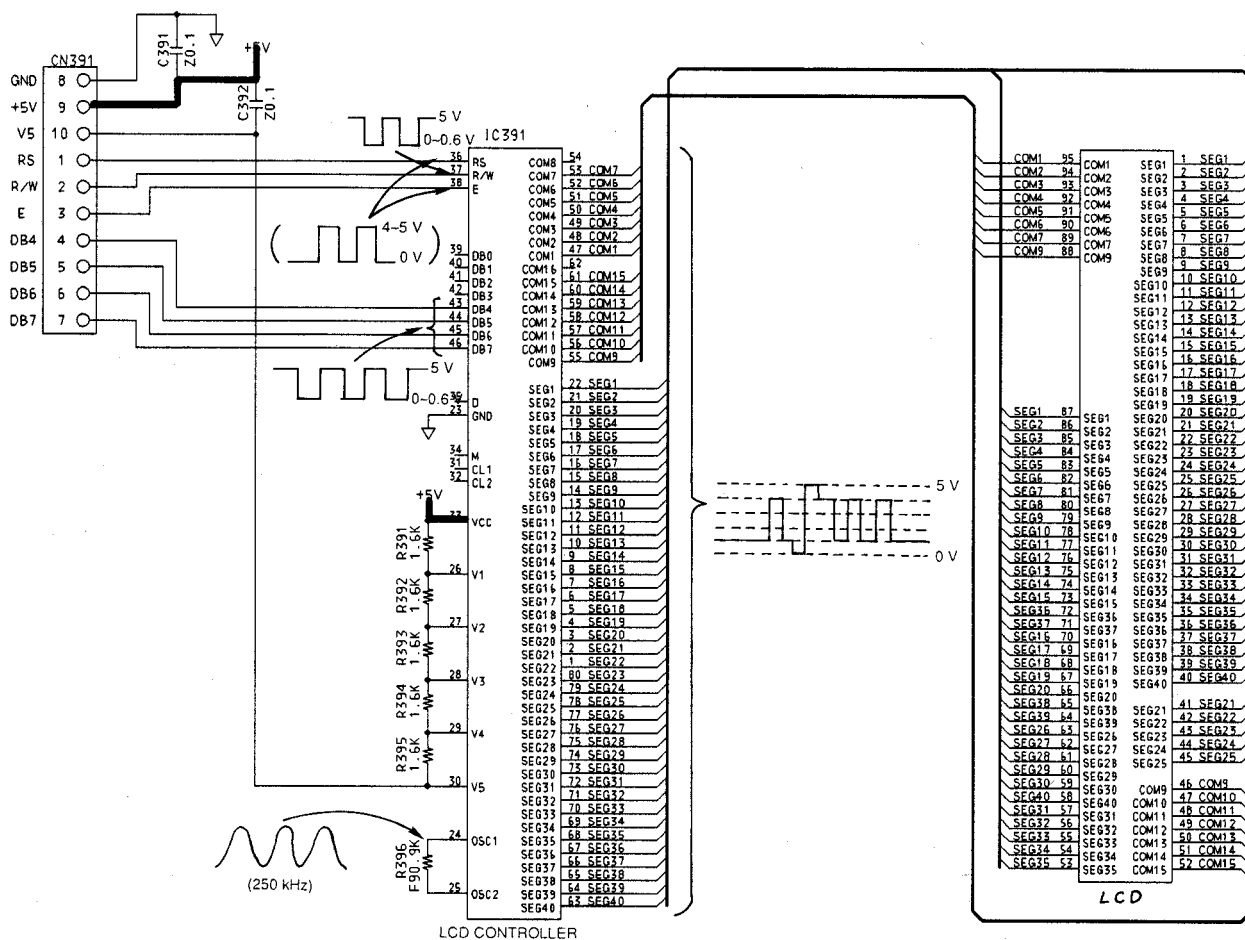
9

10

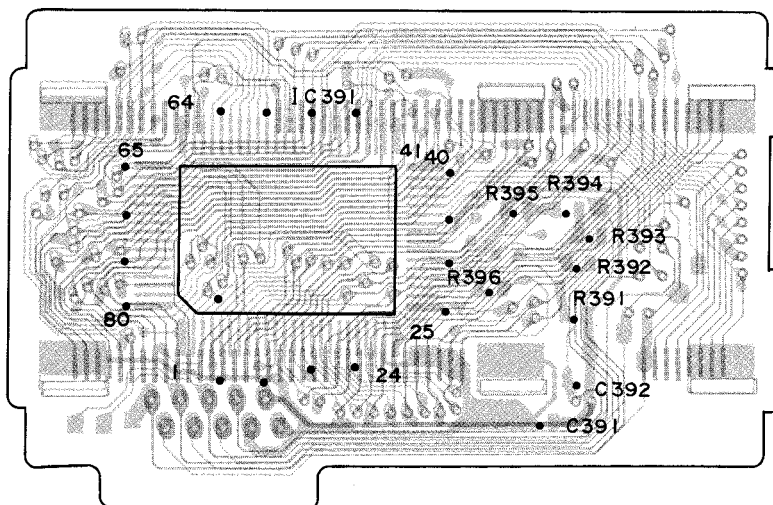
11

12



LCD CIRCUIT



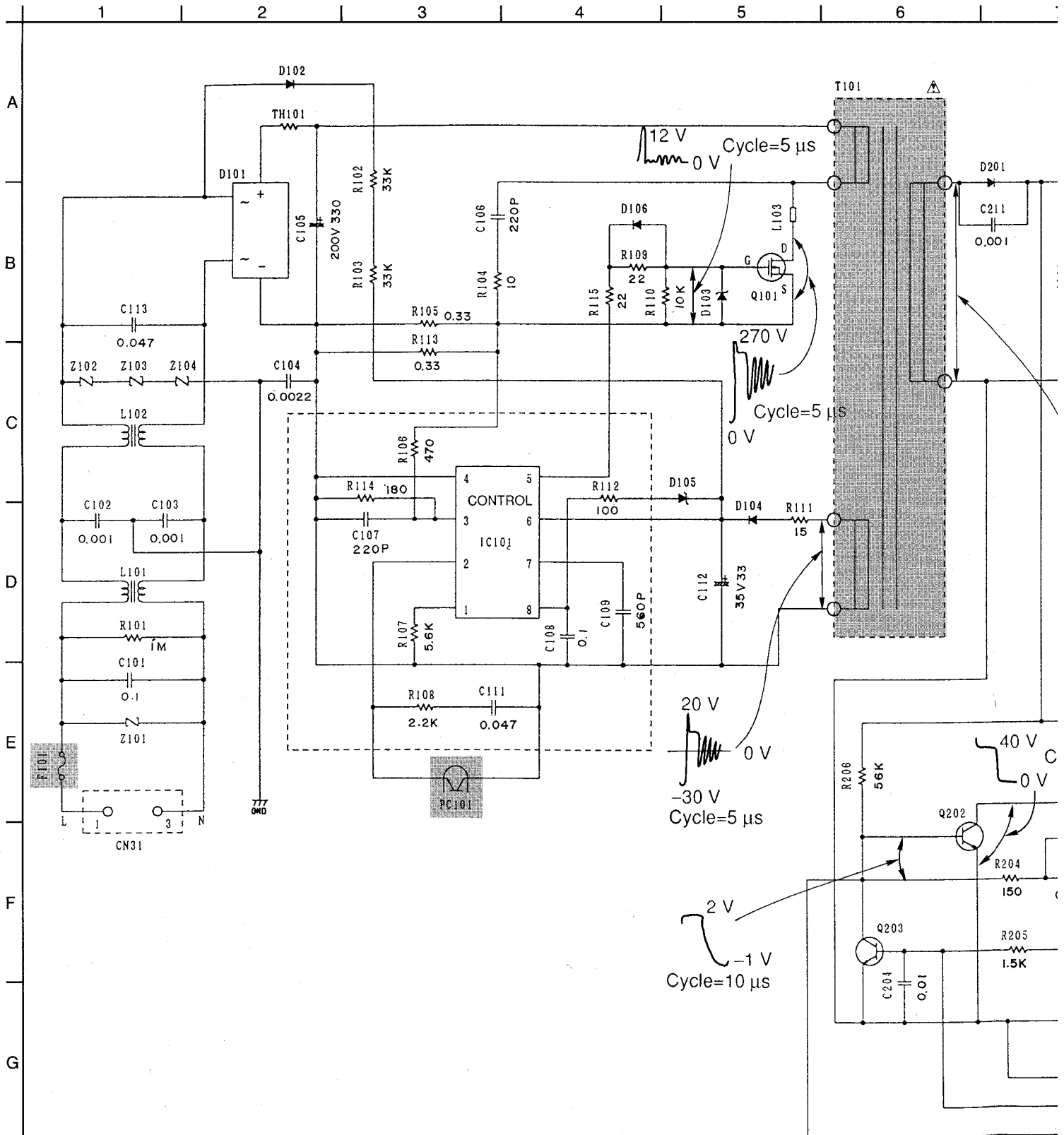
LCD BOARD (COMPONENT VIEW)



Notes:

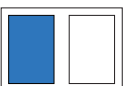
1. The circuit shown in  on the conductor indicates printed circuit on the back side of the printed circuit board.
2. The circuit shown in  on the conductor indicates printed circuit on the front side of the printed circuit board.

SCHEMATIC DIAGRAM (SWIT

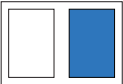
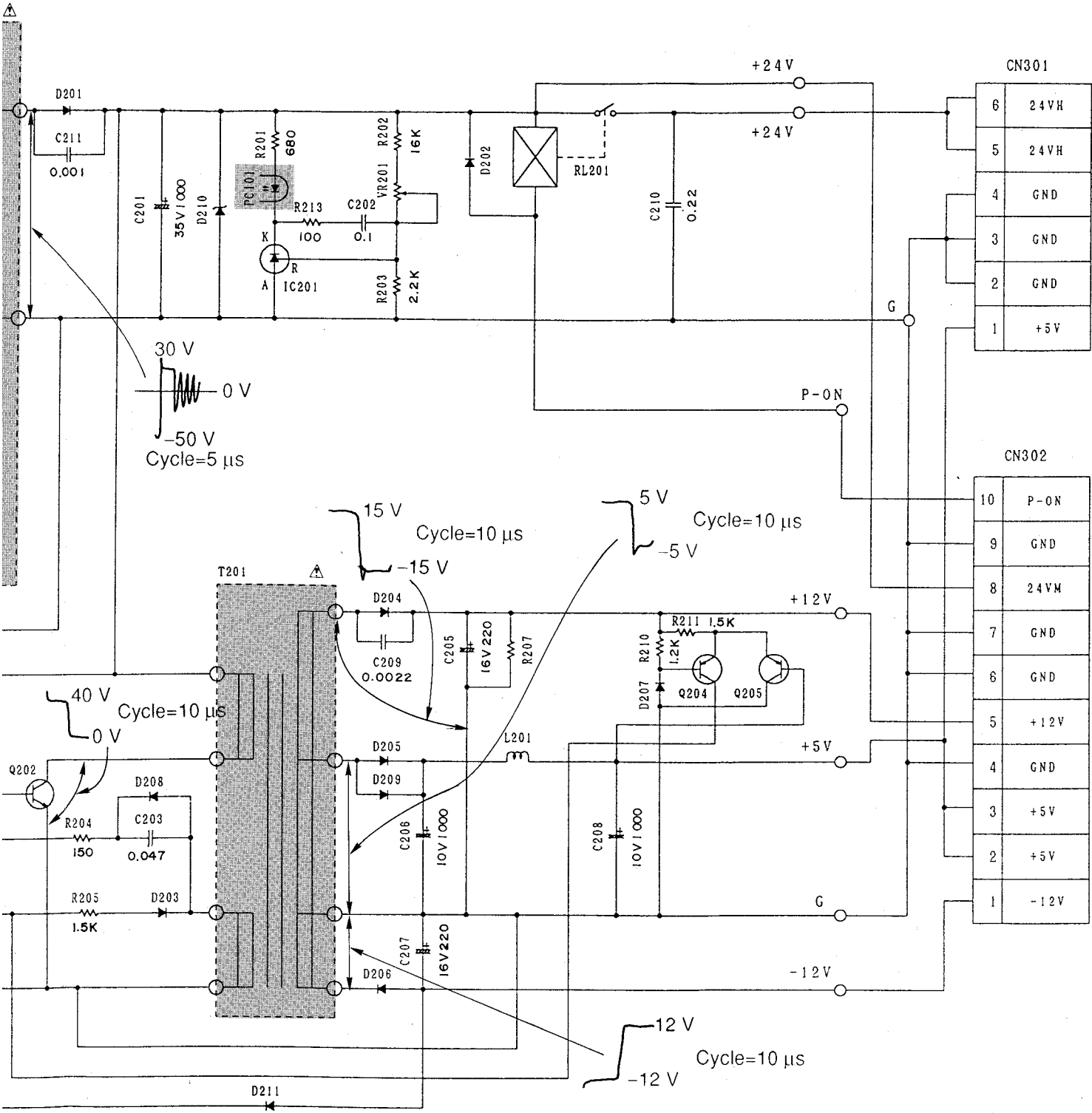


Note:

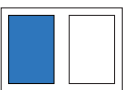
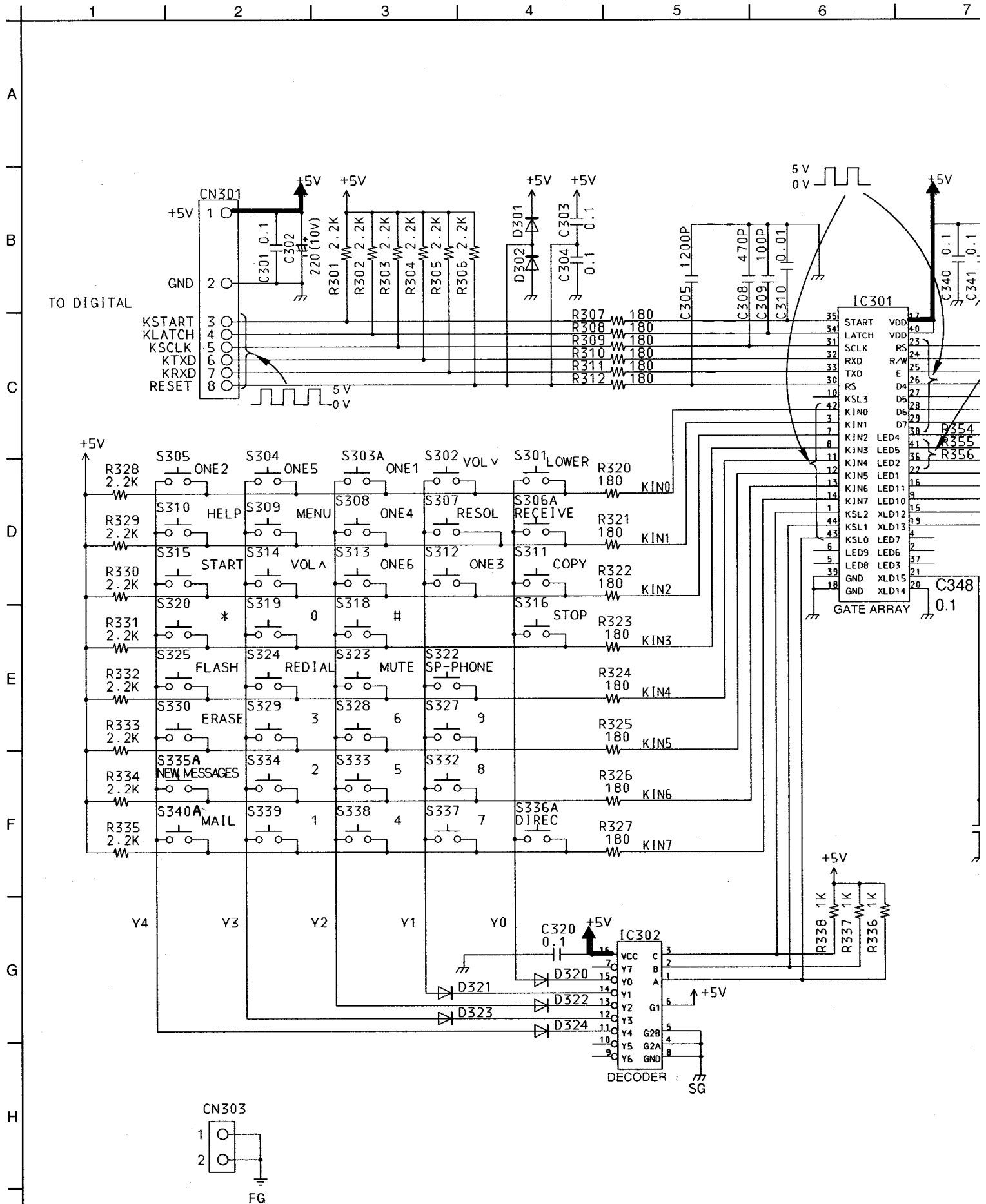
When measuring the waveform on the primary circuit of the Switching Power Supply Board, be sure to insulate the ground of the oscilloscope's probe from the ground of its power supply.



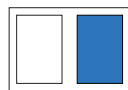
RAM (SWITCHING POWER SUPPLY)



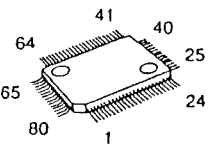
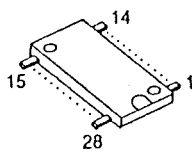
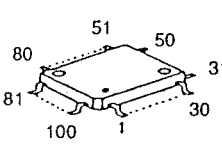
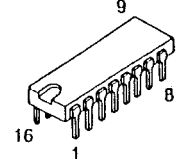
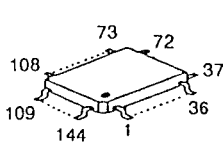
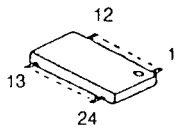
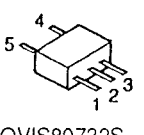
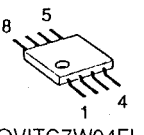
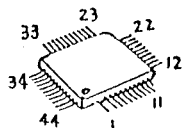
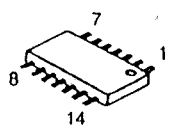
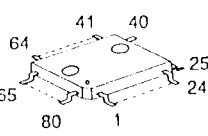
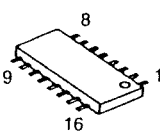
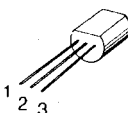
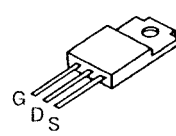
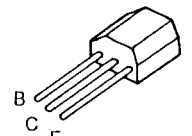
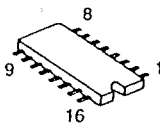
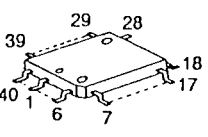
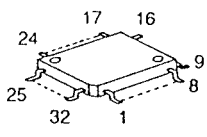
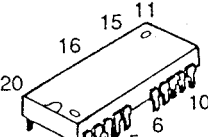
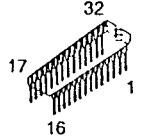
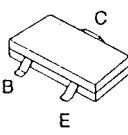
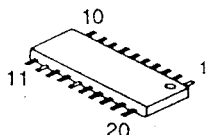

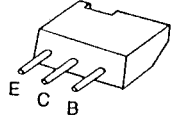
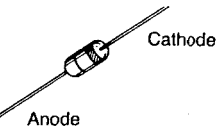
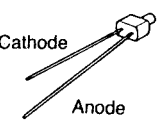
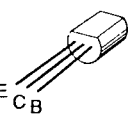
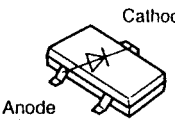
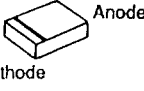

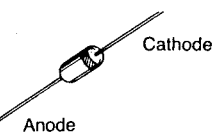
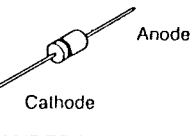
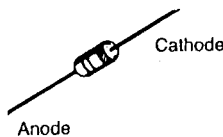
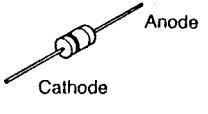
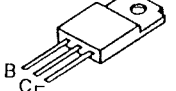
SCHEMATIC DIAGRAM (OP

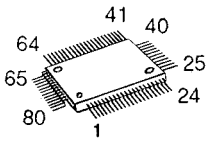
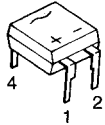
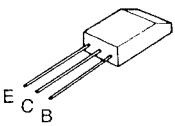
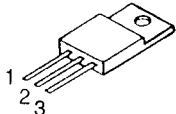
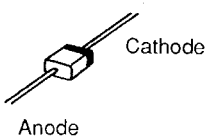


A horizontal number line with tick marks at each integer from 7 to 12. The numbers 7, 8, 9, 10, 11, and 12 are written above their respective tick marks.

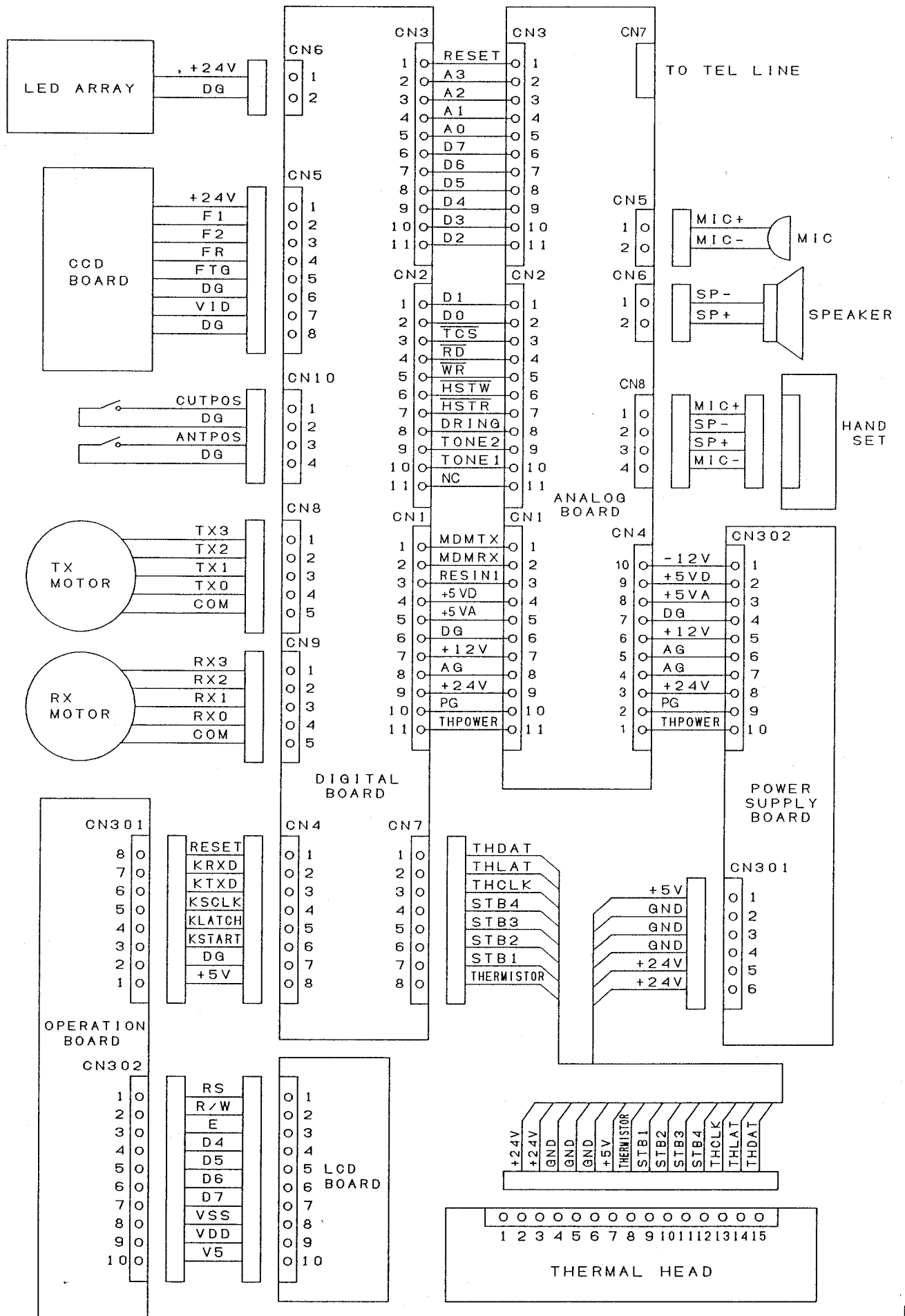


TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES

 <p>PQVIHD44780</p>	 <p>PQVICX58257C</p>	 <p>PQVIR96DFXL</p>	 <p>PQVIBA12003</p>	 <p>PQVIT7C85</p>
 <p>PQVIMS6242BG</p>	 <p>PQVIS80732S PQVITC7S00FL PQVITC7SU04F</p>	 <p>PQVITC7W04FL PQVIMC34119M PQVINJM4558M PQVIFA5311S PQVIMM1245BF</p>	 <p>MN53007QAF</p>	 <p>PQVITC4066BF PQVITC7H04AF</p>
 <p>PQVI672191F</p>	 <p>PQVITA31081F PQVISN7H138S</p>	 <p>AN1431T</p>	 <p>PQVTFS10TM10</p>	 <p>2SA933</p>
 <p>PQVITC4053BF</p>	 <p>PQVIZ8400L8V</p>	 <p>PQVIS79164FU</p>	 <p>PQVIKM5040AC</p>	 <p>PQWIF750M</p>
 <p>PQVTDTC114EU 2SB1218A, 2SD1819A PQVTDTC143E, 2SB1051K PQVTDTA143EU</p>	 <p>PQVIMC5480DW</p>	 <p>RLS71</p>	 <p>2SD1994A 2SB1322, 2SC4040R</p>	 <p>MA2300</p>
 <p>PQVDSR325CA47</p>	 <p>2SC2235</p>	 <p>MA141WA MA151WA</p>	 <p>MA143</p>	 <p>PQVDD2SBA60</p>
 <p>MA723 1SS120, 1SS131</p>	 <p>PQVDERA1506 PQVDERA1802 PQVDERA1502, MA165 PQVDAK04</p>	 <p>PQVDHZS2B1 MA4030, MA4051 MA4056</p>	 <p>1SS147, MA4220 MA4180, MA4150 MA7200</p>	 <p>2SC3568</p>

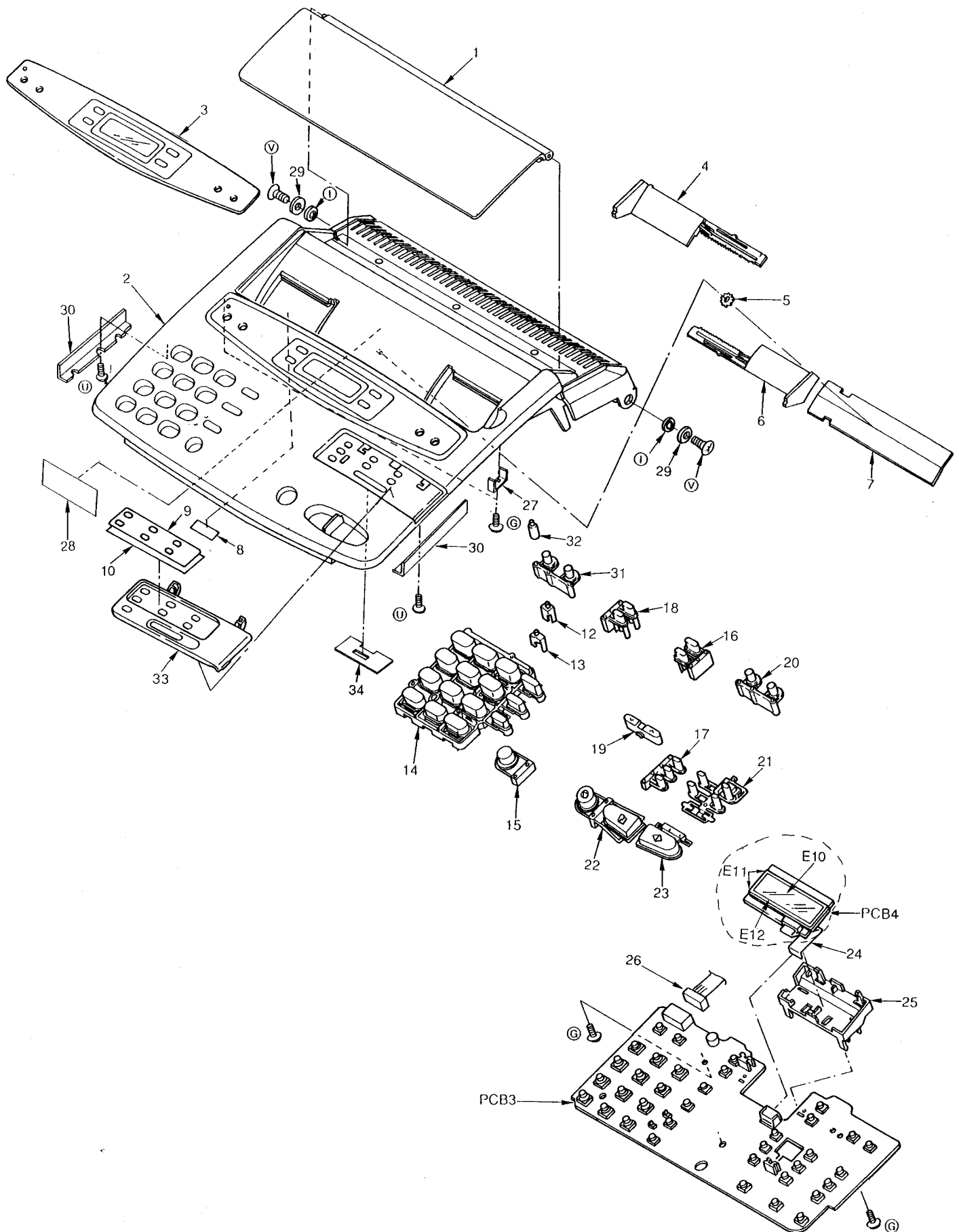
 <p>PQVID6305AD</p>	 <p>PQVDS1ZB40F1</p>	 <p>2SA1627</p>	 <p>MA6D49</p>	 <p>MA728</p>
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CONNECTION DIAGRAM

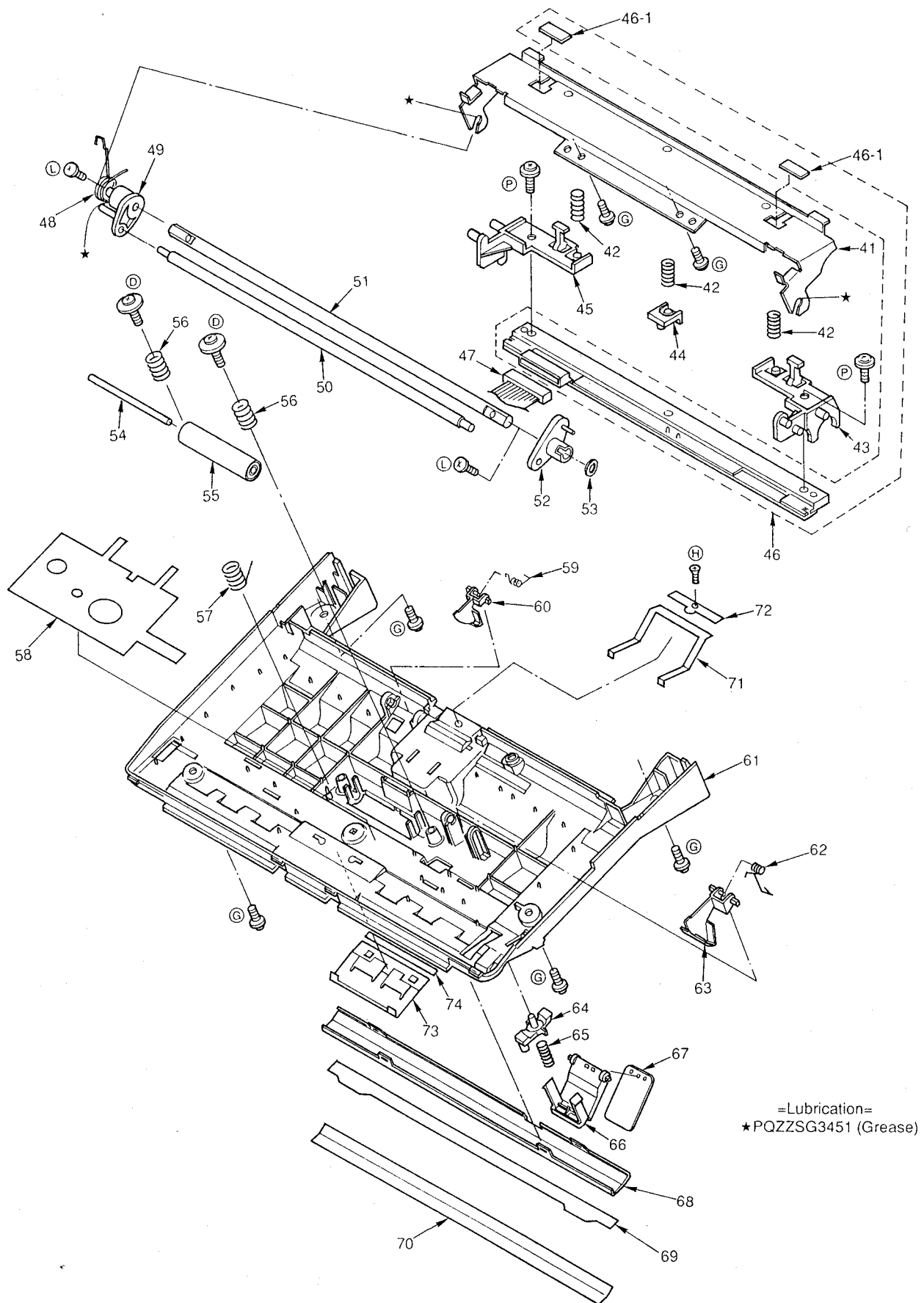


CABINET, MECHANICAL AND ELECTRICAL PARTS LOCATION

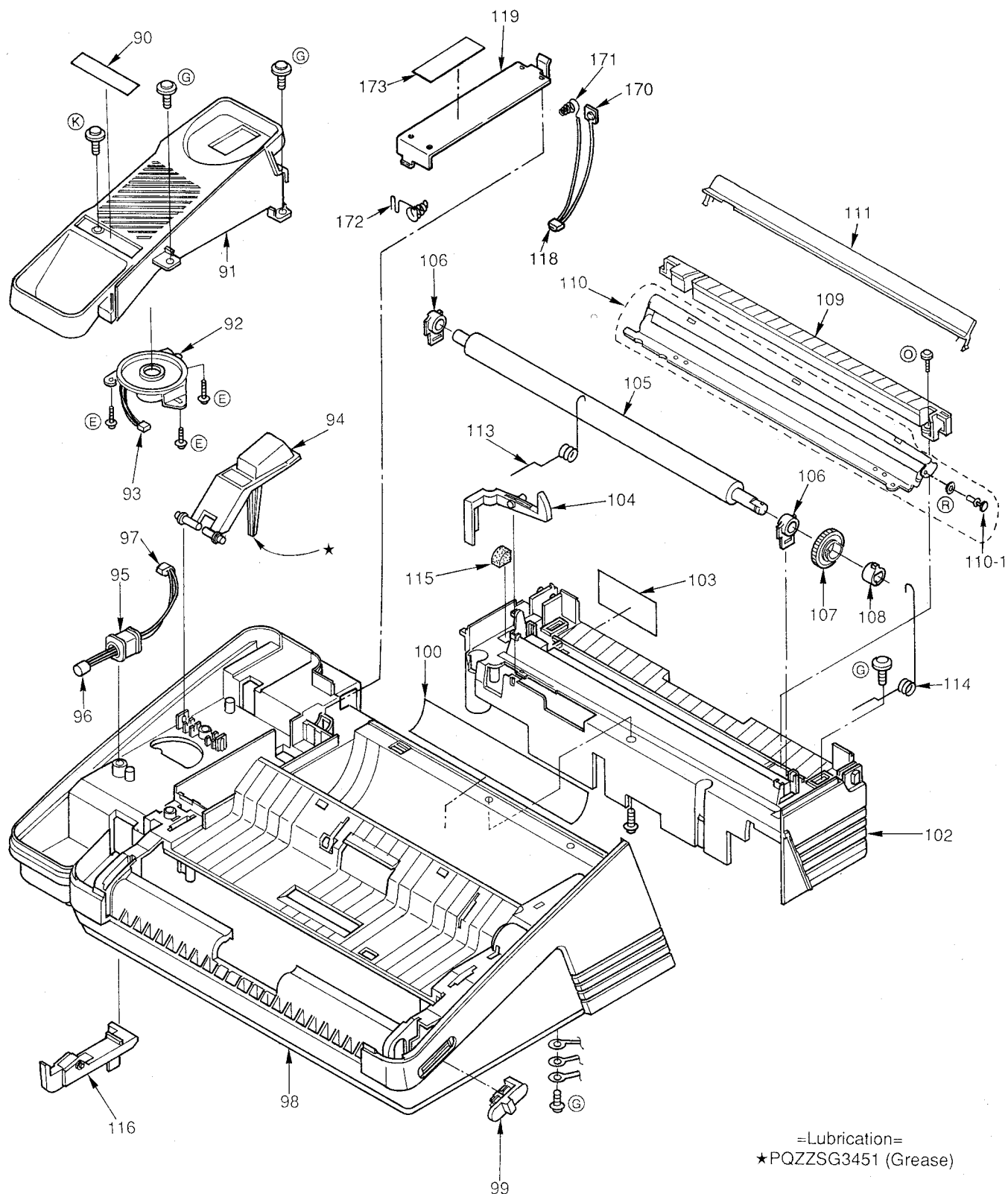
1. OPERATION PANEL SECTION



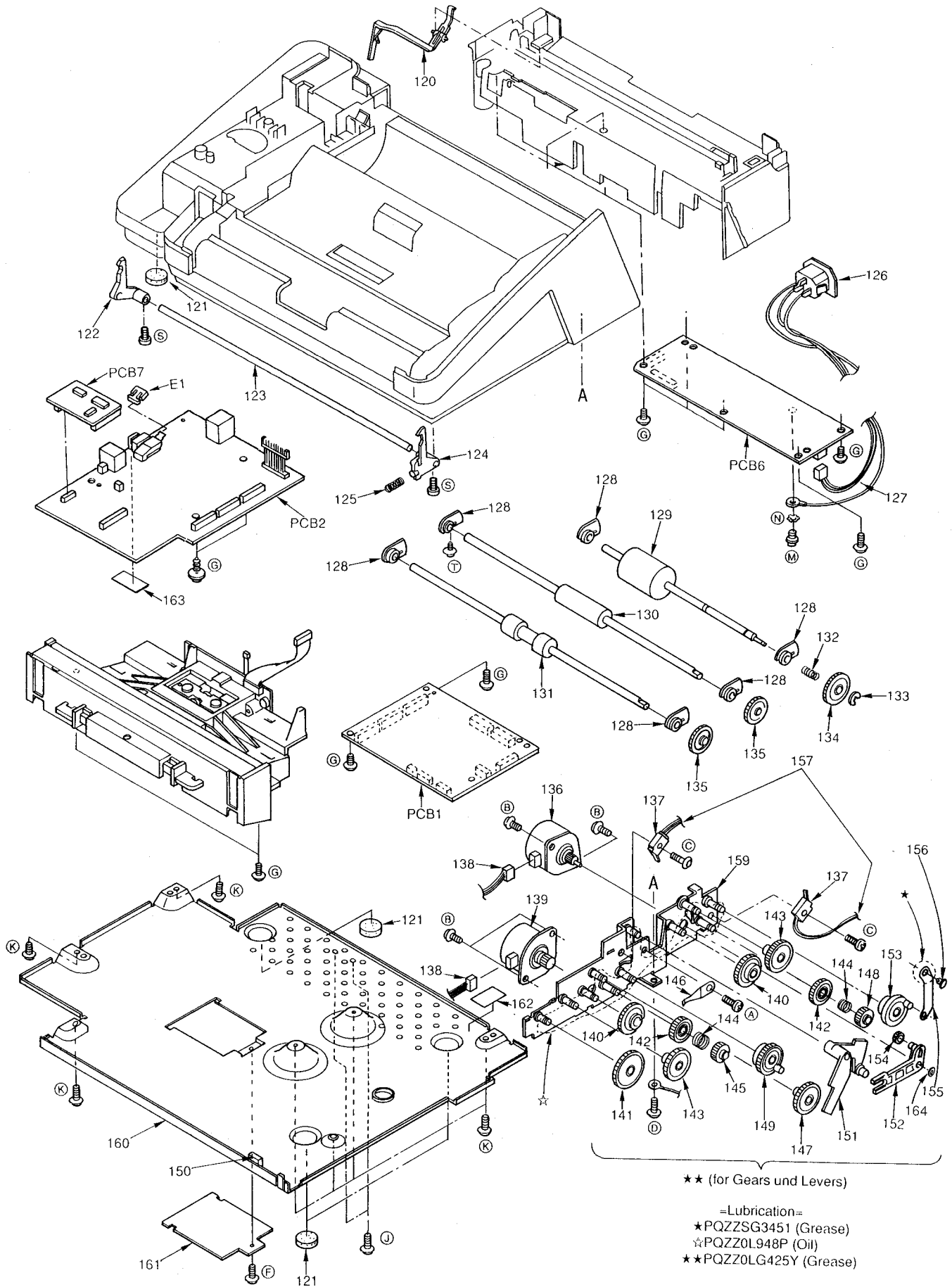
2. THERMAL HEAD SECTION



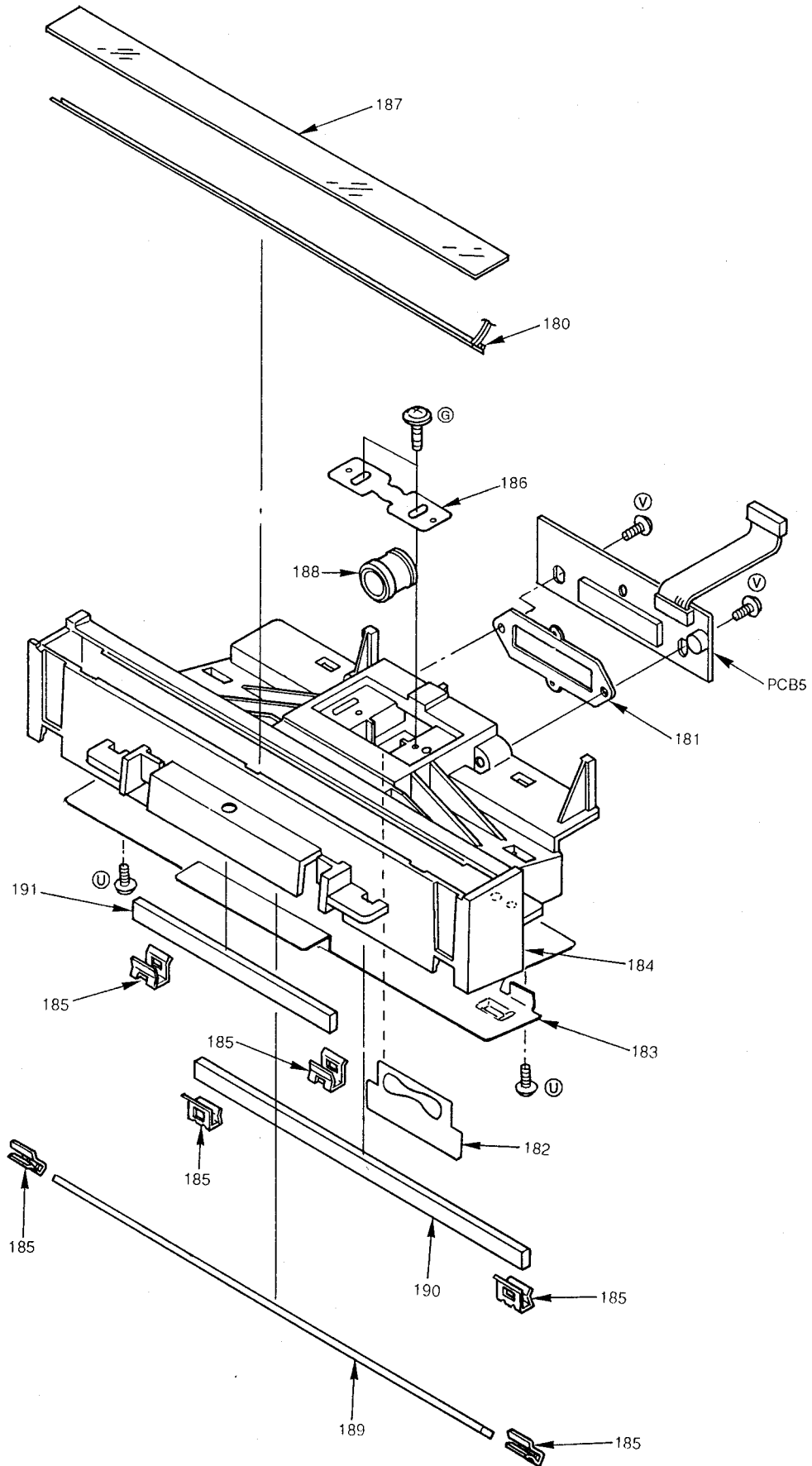
3. UPPER BODY SECTION









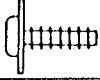

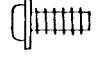



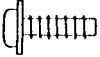







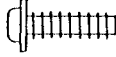

4. LOWER BODY SECTION



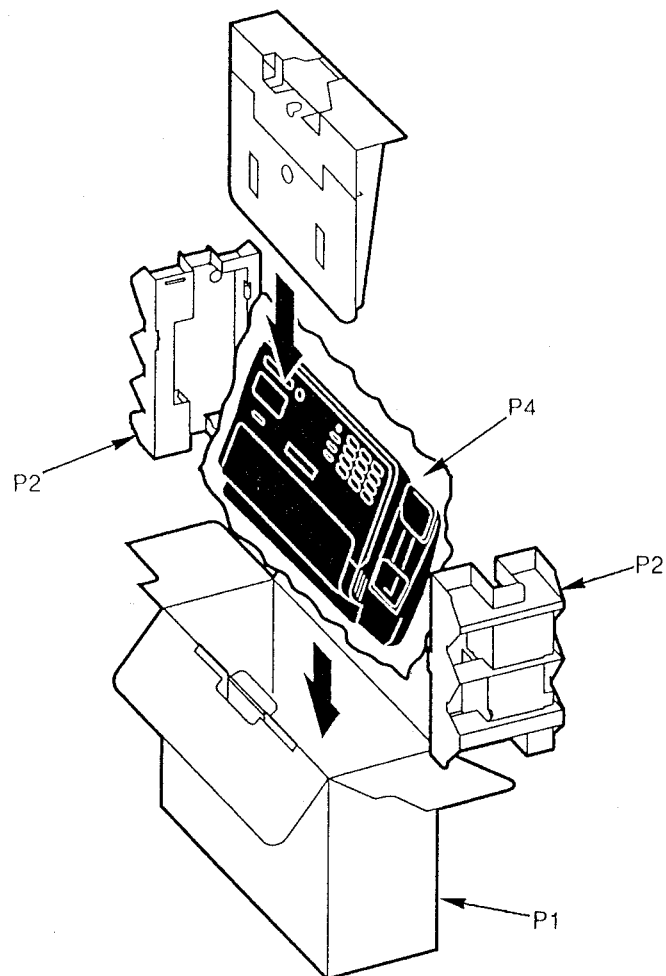
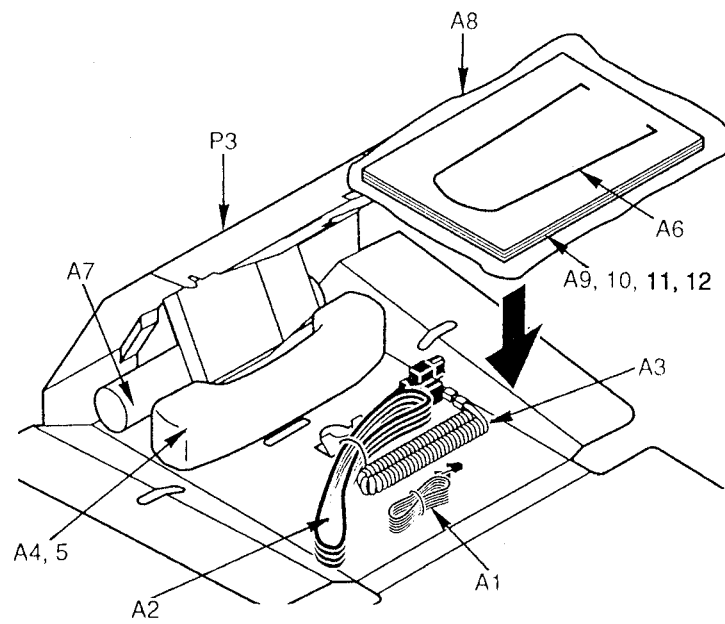
5. CCD UNIT SECTION



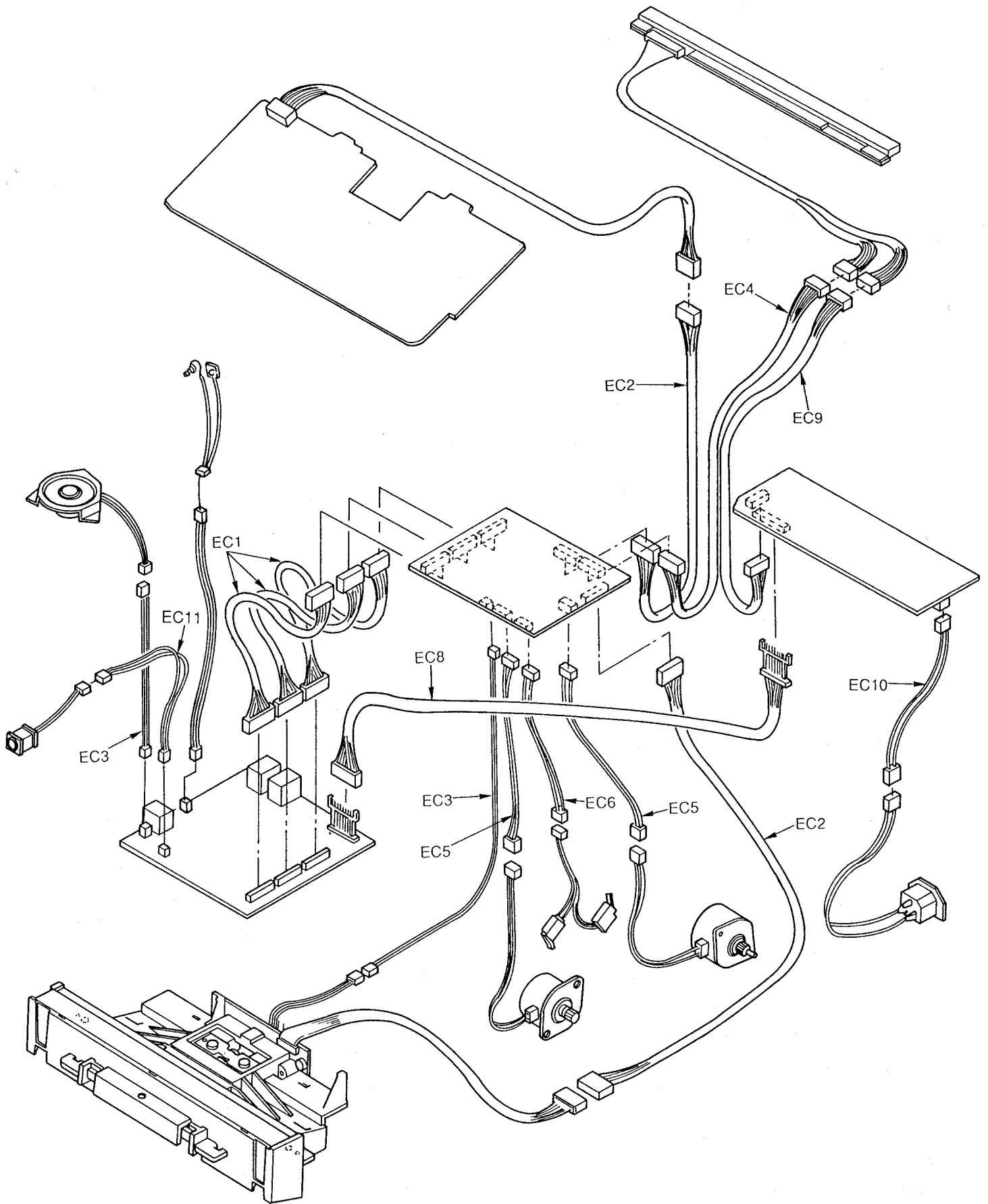
6. ACTUAL SIZE OF SCREWS AND WASHER

Ref. No.	Part No.	Figure	Ref. No.	Part No.	Figure
Ⓐ	XTT3+5F		Ⓜ	XSB4+6	
Ⓑ	XYC3+CF6		Ⓝ	XWC4B	
Ⓒ	XYN2+C8		Ⓞ	XYN3+CF14	
Ⓓ	XTW3+W10P		Ⓟ	XYC3+FF8C	
Ⓔ	XTW3+S8M		Ⓠ	XTS3+10JFZ	
Ⓕ	XTW3+U6L		Ⓡ	XWG2C6VW	
Ⓖ	XTW3+S10P		Ⓢ	XYN26+F6	
Ⓗ	XTS26+8G		Ⓣ	PJHE5065Z	
Ⓘ	XWE4		Ⓤ	XTB3+8G	
Ⓙ	XSN3+W6FZ		Ⓥ	XYN3+F16	
Ⓚ	XTW3+S12P				
Ⓛ	XST26+5				

ACCESSORIES AND PACKING MATERIALS



TOOLS



This replacement parts list is for U.S.A. version only. Refer to the simplified manual (cover) for other areas.

REPLACEMENT PARTS LIST

Notes:

Model KX-F750

1. RTL (Retention Time Limited)

The marking (RTL) indicates that the Retention Time is limited for this item. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependent on the type of assembly, and in accordance with the laws governing part and product retention.

After the end of this period, the assembly will no longer be available.

2. Important safety notice

Components identified by the Δ mark special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

3. The S mark indicates service standard parts and may differ from production parts.

4. RESISTORS & CAPACITORS

Unless otherwise specified,

All resistors are in ohms (Ω) K=1000 Ω , M=1000K Ω

All capacitors are in MICRO FARADS (μ F) P= μ F

*Type & Wattage of Resistor

Type

ERC: Solid	ERX: Metal Film	PQ4R: Carbon
ERD: Carbon	ERG: Metal Oxide	ERS: Fusible Resistor
PQRD: Carbon	ERO: Metal Film	ERF: Cement Resistor

Wattage

10, 16: 1/8W	14, 25: 1/4W	12: 1/2W	1: 1W	2: 2W	3: 3W
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*Type & Voltage of Capacitor

Type

ECFD: Semi-Conductor	ECCD, ECKD, ECBT, PQCBC: Ceramic
ECQS: Styrol	ECQE, ECQV, ECQG: Polyester
PQCUV: Chip	ECEA, ECSZ: Electrolytic
ECQMS: Mica	ECQP: Polypropylene

Voltage

ECQ Type	ECQG ECQV Type	ECSZ Type	Others
1H: 50V	05: 50V	0F: 3.15V	0J: 6.3V
2A: 100V	1: 100V	1A: 10V	1A: 10V
2E: 250V	2: 200V	1V: 35V	1C: 16V
2H: 500V		0J: 6.3V	1E, 25: 25V
			1J: 63V
			2A: 100V

Ref. No.	Part No.	Part Name & Description	Pcs
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CABINET, MECHANICAL AND ELECTRICAL PARTS

		(1. OPERATION PANEL SECTION)	
1	PQKS10007Z1	DOCUMENT TRAY	S 1
2	PQGG10047Y1	OPERATION GRILLE	S 1
3	PQGP10096Y	LCD PANEL	1
4	PQKR10014Y1	GUIDE-L, DOCUMENT	1
5	PQDG10033Z	GEAR, DOCUMENT GUIDE	1
6	PQKR10015Y1	GUIDE-R, DOCUMENT	1
7	PQMH10182Z	ANGLE, DOCUMENT GUIDE	1
8	PQHX10473Z	PLATE STOPPER	1
9	PQGV10030Z	TRANSPARENT PLATE (for TEL. CARD)	1
10	PQGD10127X	TEL. CARD	1
11	Not Used		
12	PQGP10091Z	LED COVER-A	1
13	PQGP10092Z	LED COVER-B	1
14	PQBX10217Y1	BUTTON, DIAL	1
15	PQBC10167Z1	BUTTON, SP-PHONE	1
16	PQBX10222Z2	BUTTON, MODE / RESOLUTION	1
17	PQBX10224Z1	BUTTON, DIALER-B	1
18	PQBX10225Z2	BUTTON, DIRECTORY, MAIL BOX	1
19	PQBC10170Z1	BUTTON, VOLUME	1
20	PQBX10227Z2	BUTTON, MENU / HELP	1
21	PQBX10223Z1	BUTTON, DIALER-A	1
22	PQBX10216Z1	BUTTON, STOP/COPY	1
23	PQBC10166Z1	BUTTON, START/SET	1
24	PQJE10069Z	FLAT CABLE	1
25	PQHR10354Y	GUIDE, LCD UNIT	1
26	PQJS08Q61W	CONNECTOR, 8P	1
27	PQMH10198Z	SUB FRAME-2	2
28	PQQT10944Z	CAUTION LABEL	1
29	PQFV10002Y	SPACER	2
30	PQMH10197Z	SUB FRAME-1	2

Ref. No.	Part No.	Part Name & Description	Pcs
31	PQBX10226Z2	BUTTON, MESSAGES, ERASE	1
32	PQGP10097Z	LED COVER-C	1
33	PQKK10050Z1	COVER, DIALER	1
34	PQHX10498Z	SHEET	1
		(2. THERMAL HEAD SECTION)	
41	PQMD10065Z	FRAME, THERMAL HEAD	1
42	PQUS10127Z	SPRING, THERMAL HEAD	3
43	PQDE10041Z	GUIDE-L, THERMAL HEAD	1
44	PQDE10029Z	GUIDE, HEAD SPRING	1
45	PQDE10042Z	GUIDE-R, THERMAL HEAD	1
46	PQWEF500M	THERMAL HEAD	1
46-1.	PQHR5019Z	SPACER	2
47	PQJS15Q60Z	CONNECTOR, 15P	1
48	PQUS10122Y	SPRING, CURL REDUCTION	1
49	PQDE10031Z	ARM, PAPER CURL REDUCTION	1
50	PQDF10035Z	SHAFT, RECORDING PAPER GUIDE	1
51	PQDF10034Z	SHAFT, PAPER CURL REDUCTION	1
52	PQDE10032Z	ARM, PAPER CURL REDUCTION	1
53	PQNPB052080	SPACER	1
54	PQDF10036Z	SHAFT, SUPPORT ROLLER	1
55	PQDR9685Z	ROLLER, SUPPROT	1
56	PQUS10125Y	SPRING-A, ROLLER	2
57	PQUS10148Z	SPRING, STATIC ELECTRIC	1
58	PQHX10462Z	INSULATOR SHEET	1
59	PQUS10134Z	SPRING-A, DOCUMENT DETECTION	1
60	PQDE10034Y	LEVER, DOCUMENT DETECTION	1
61	PQUV10015X	COVER, OPERATION GRILLE	S 1
62	PQUS10135Y	SPRING-B, DOCUMENT DETECTION	1
63	PQDE10033Z	LEVER, READ DETECTION	1
64	PQHR10312Z	LEVER, SEPARATION SPRING ADJ.	1
65	PQUS10124Z	SPRING, SEPARATION	1
66	PQHR10311Z	GUIDE, SEPARATION RUBBER	1
67	PQHG10150Z	RUBBER PARTS, DOCUMENT SEPARATE	1
68	PQMH10183Z	READING FRAME	1
69	PQHX10472Z	COVER (READING SHEET)	1
70	PQHX10436Z	COVER (READING PLATE)	1
71	PQUS10123Y	SPRING-A, DOCUMENT SEPARATION	1
72	PQMH10125Y	ANGLE, ADF SPRING	1
73	PQUS10126Y	SPRING-B, DOCUMENT FEED	1
74	PQHX10475Z	PLASTIC PARTS, SHEET	1
		(3. UPPER BODY SECTION)	
90	PQHX10241Z	CARD, TEL. NO.	1
91	PQKM10163Z1	HANDSET CRADLE	S 1
92	PQAS5P13Z	SPEAKER	1
93	PQJS02Q68Z	CONNECTOR, 2P	1
94	PQBH10019Z1	BUTTON, HOOK	1
95	PQHG556Z	RUBBER PARTS, MIC COVER	1
96	PQJM128Z	BUILT-IN-MICROPHONE	1
97	PQJS02Q62Z	CONNECTOR, 2P	1
98	PQKM10161Z1	CABINET BODY	S 1
99	PQBD10033W1	KNOB, OPEN	1
100	PQQT10945Z	INDICATION LABEL	1
101	Not Used		
102	PQKM10162U1	REAR CABINET	S 1
103	PQGT11687Z	NAME PLATE	1
104	PQDE10038Z	LEVER, RECORDING PAPER SENSOR	1
105	PQDN10023Z	ROLLER, RECORDING PAPER	1
106	PQDJ10001Y	SPACER	2
107	PQDG10035Z	GEAR, RECORDING PAPER ROLLER	1
108	PQDE10043Z	SPACER	1
109	PQUG10004Y	LOWER GUIDE, CUTTER	1
110	PQZEF500M	PAPER CUTTER	1
110-1	PQHR10361Z	NYLON REVET	1
111	PQUG10003Z	UPPER GUIDE, CUTTER	1
112	Not Used		
113	PQUS10129Z	SPRING-L, GRILLE	1

This replacement parts list is for U.S.A. version only. Refer to the simplified manual (cover) for other areas.

Ref. No.	Part No.	Part Name & Description	Pcs
114	PQUS10130Y	SPRING-R, GRILLE	1
115	PQHG10301Z	RUBBER PARTS, BRAKE	1
116	PQDE10037Z	LEVER, DOOR OPEN SENSOR	1
117	Not used		
118	PQJS02Q89Z	CONNECTOR, 2P	1
119	PQKK10048Z1	COVER, BATTERY	1
170	PQJC915Z	BATTERY TERMINAL, + Side	1
171	RJC314A	BATTERY TERMINAL, - Side	1
172	RJC746Z	BATTERY TERMINAL, + - Side	1
173	PQQT11089Z	LABEL, BATTERY COVER	1
		(4. LOWER BODY SECTION)	
120	PQDE10030Z	LEVER, SENSOR	1
121	PQHG10065Z	RUBBER PARTS, FOOT	4
122	PQDE10036Z	LEVER-R, LOCK	1
123	PQDF10033Z	SHAFT, LOCK LEVER	1
124	PQDE10035Z	LEVER-L, LOCK	1
125	PQUS10128Z	SPRING, LOCK LEVER	1
126	PQJP3A3Y	AC SOCKET	1
127	PQJS02Q59Y	CONNECTOR, 2P	1
128	PQDJ10002Z	SPACER	6
129	PQDN10021Z	ROLLER, SEPARATION	1
130	PQDN10022Z	ROLLER, DOCUMENT FEED	1
131	PQDN10027Z	ROLLER-B, DOCUMENT FEED	1
132	PQUS10014Z	SPRING, ONE WAY	1
133	XUC2FY	RETAINING RING	1
134	PQDG10006Z	GEAR, SEPARATION ROLLER	1
135	PQDG10034Z	GEAR, DOCUMENT FEED ROLLER	2
136	PQQJ10011Z	RX MOTOR	1
137	PQST2A04Z	SWITCH	2
138	PQJS05R67Y	CONNECTOR, 5P	2
139	PQQJ10010Z	TX MOTOR	1
140	PQDG10025Z	GEAR-A, IDLER	2
141	PQDG10029Z	GEAR-E, IDLER	1
142	PQDG10031Y	GEAR-B, ONE WAY	2
143	PQDG10026Z	GEAR-B, IDLER	2
144	PQUS10133Z	SPRING, CLUTCH	2
145	PQDG10030Z	GEAR-A, ONE WAY	1
146	PQMH10184Y	ANGLE (GEAR STOPPER)	1
147	PQDG10027Z	GEAR-C, IDLER	1
148	PQDG10042Z	GEAR-C, ONE WAY	1
149	PQDG10024Y	GEAR, CURL REDUCTION	1
150	PQHE10066Y	SPACER	2
151	PQDE10040Z	ARM, LINK	1
152	PQDE10039Z	ARM-A, CUTTER	1
153	PQDG10032Y	GEAR, PAPER CUTTER	1
154	PQDG10028Z	GEAR-D, IDLER	1
155	PQDE10044Z	ARM-B, CUTTER	1
156	PQHD10023Z	SCREW	1
157	PQJS04Q64Z	CONNECTOR, 4P	1
158	Not Used		
159	PQUA10009X	GEAR CHASSIS	1
160	PQMD10066Z	BOTTOM FRAME	1
161	PQMH10186Z	LID, ROM CHANGE	1
162	PQHX10465Z	INSULATOR SHEET	1
163	PQHX10499Z	SHEET	1
164	PQFN51Z	WASHER	1
		(5. CCD SECTION)	
180	LNR304501	LED ARRAY	1
181	PQHR9725Z	SPACER	1
182	PQHX10457Z	COVER	1
183	PQMD10073Z	COVER	1
184	PQUA10008Z	CHASSIS	1
185	PQUS216Z	SPRING, MIRROR	6
186	PQUS217Z	SPRING, LENS	1
187	PQOG10003Z	GLASS	1
188	PQOL6Y	LENS	1
189	PQOM10010Z	MIRROR, LONG	1

Ref. No.	Part No.	Part Name & Description	Pcs
190	PQ0M10011Z	MIRROR, MIDDLE	1
191	PQ0M10012Z	MIRROR, SHORT	1
ACCESSORIES AND PACKING MATERIALS			
A1	PQJA59V	CORD, TEL. 	S 1
A2	PQJA200Z	CORD, AC 	1
A3	PQJA212N	CORD, HANDSET	1
A4	PQJX2PHA409Z	HANDSET	1
A5	PQPH27Y	PROTECTION COVER (HANDSET)	1
A6	PQUS10136Z	SPRING (STAKER)	1
A7	PQHP10023Z	RECORDING PAPER	1
A8	PQPP10005Z	PROTECTION COVER (DOCUMENT)	1
A9	PQQX11136Z	INSTRUCTION BOOK	1
A10	PQQW11052Z	INSTRUCTION BOOK (ENGLISH) (QUICK REFERENCE)	1
A11	PQQW11053Z	INSTRUCTION BOOK (SPANISH) (QUICK REFERENCE)	1
A12	PQQW11051Z	DIAL CARD	1
P1	PQPK11197Z	GIFT BOX	1
P2	PQPN10392Z	CUSHION COMPLETE, L/R	1
P3	PQPN10393Z	ACCESSORY BOX	1
P4	PQPH92Z	PROTECTION COVER	1
DIGITAL BOARD PARTS			
PCB1	PQWP1F750M	DIGITAL BOARD ASS'Y(RTL)	1
		(ICs)	
IC1	PQVIZ8400L8V	IC	1
IC2	PQWIF750M	IC	1
IC3	PQVICX58257C	IC	S 1
IC4	PQVIT7C85	IC	1
IC5	PQVIR96DFXL	IC	1
IC6,7	PQVIBA12003	IC	S 2
IC8	PQVIMS6242BG	IC	1
IC9	PQVIMM1245BF	IC	1
IC10	PQVITC7H04AF	IC	S 1
IC11	PQVITC7S00FL	IC	1
IC12	PQVITC7SU04F	IC	1
IC13	PQVINJM4558M	IC	1

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Ref. No.	Part No.	Value, Part Name & Description	Pcs	Ref. No.	Part No.	Value, Part Name & Description	Pcs
Q1	2SD1994A	(TRANSISTORS) TRANSISTOR(SI)	1	C701,702	PQCUV1E104MD	0.1	S 2
Q2	PQVTDTC114EU	TRANSISTOR(SI) (or UN5211TX)	S 1	C703	PQCUV1H103KB	0.01	1
Q3,4	2SB1322	TRANSISTOR(SI) (or 2SB1237R)	S 2	C704	PQCUV1E104MD	0.1	1
Q5	2SD1819A	TRANSISTOR(SI) (or 2SC4155R)	S 1	C705,706	PQCUV1H103KB	0.01	2
Q6	2SB1051K	TRANSISTOR(SI)	1	C707	PQCUV1E104MD	0.1	1
Q7	PQVTDTC114EU	TRANSISTOR(SI) (or UN5211TX)	S 1	C708	PQCUV1H220JC	22P	1
Q8	2SD1819A	TRANSISTOR(SI) (or 2SC4155R)	S 1	C709,710	PQCUV1H470JC	47P	2
D601	MA7200	(DIODES) DIODE(SI)	1	C711,712	PQCUV1E104MD	0.1	2
D602	1SS147	DIODE(SI)	1	C714	PQCUV1H220JC	22P	1
D603	MA7200	DIODE(SI)	1	C715	PQCUV1H180JC	18P	1
D604	1SS147	DIODE(SI)	1	C716,717	PQCUV1E104MD	0.1	2
D701	MA151WA	DIODE(SI)	1	C719	PQCUV1E104MD	0.1	1
BATT	PQPCR2032H09	(BATTERY) LITHIUM BATTERY	1	C721	PQCUV1E104MD	0.1	1
CN1-3	PQJP11A19Z	(CONNECTORS) CONNECTOR, 11P	3	C725-732	ECUV1H270JCV	27P	8
CN4,5	PQJP8G30Y	CONNECTOR, 8P	2	C733	PQCUV1E104MD	0.1	1
CN6	PQJP02G100Z	CONNECTOR, 2P	1	LC501	EXCEMT222D	(FERRITE BEADS) FERRITE BEAD	1
CN7	PQJP08G100Z	CONNECTOR, 8P	1	LC502	EXCEMT220B	FERRITE BEAD	1
CN8,9	PQJP05G100Z	CONNECTOR, 5P	2	L403,404	PQLQR2BT	(COILS) COIL	S 2
CN10	PQJP4G30Y	CONNECTOR, 4P	1	L405,406	PQLQR1ET	COIL	2
C403	PQCUV1E104MD	(CAPACITORS) 0.1	S 1	L407-414	PQLQR2BT	COIL	S 8
C405	PQCUV1H182KB	0.0018	1	RA3,4	EXBS8V101J	(COMPONENT COMBINATIONS) RESISTOR ARRAY	2
C406	PQCUV1H222KB	0.0022	1	J1,2	PQ4R10XJ000	(RESISTORS) 0	S 2
C407	PQCUV1E104MD	0.1	S 1	J4	PQ4R10XJ000	0	S 1
C409-425	PQCUV1E104MD	0.1	17	L401	PQ4R10XJ000	0	S 1
C426	PQCUV1H180JC	18P	1	L402	PQ4R10XJ000	0	S 1
C427	PQCUV1H330JC	33P	1	L502	PQ4R10XJ000	0	S 1
C428	PQCUV1H180JC	18P	1	L701-703	PQ4R10XJ000	0	S 3
C429	PQCUV1H120JC	12P	1	R402	PQ4R10XJ000	0	S 1
C430-432	PQCUV1E104MD	0.1	3	R403	PQ4R10XJ102	1K	S 1
C434	PQCUV1H220JC	22P	1	R404	PQ4R10XJ472	4.7K	S 1
C501-506	PQCUV1E104MD	0.1	6	R405	PQ4R10XJ103	10K	S 1
C507	ECEA0JK221	220	1	R406-409	PQ4R10XJ101	100	4
C508,509	PQCUV1E104MD	0.1	S 2	R410	PQ4R10XJ000	0	S 1
C510	PQCUV1H102J	0.001	1	R411	PQ4R10XJ222	2.2K	S 1
C511	PQCUV1C224ZF	0.22	1	R412	PQ4R10XJ103	10K	S 1
C513	PQCUV1E104MD	0.1	S 1	R413-419	PQ4R10XJ101	100	S 7
C514	PQCUV1H331JC	330P	1	R420	PQ4R10XJ223	22K	S 1
C515	PQCUV1E104MD	0.1	1	R421	PQ4R10XJ563	56K	S 1
C516	PQCUV1H105JC	1	S 1	R422	PQ4R10XJ473	47K	S 1
C518	PQCUV1H331JC	330P	1	R423-432	PQ4R10XJ472	4.7K	S 10
C519	PQCUV1E104MD	0.1	S 1	R434	PQ4R10XJ472	4.7K	S 1
C520	PQCUV1H102J	0.001	1	R435	PQ4R10XJ101	100	S 1
C521	PQCUV1E104MD	0.1	1	R436	PQ4R10XJ105	1M	S 1
C522,523	PQCUV1H102J	0.001	2	R437	PQ4R10XJ270	27	S 1
C526	PQCUV1H103KB	0.01	1	R438	PQ4R10XJ105	1M	S 1
C527	ECEA1CK101	100	1	R439	PQ4R10XJ270	27	S 1
C528	PQCUV1H105JC	1	3 1				
C530	ECUV1E105ZF	1	S 1				
C601	ECEA1VKS4R7	4.7	1				

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Ref. No.	Part No.	Value, Part Name & Description	Pcs	Ref. No.	Part No.	Value, Part Name & Description	Pcs
R440	PQ4R10XJ682	6.8K	S 1	Q 1	2SA1627	(TRANSISTORS) TRANSISTOR(SI)	1
R443,444	PQ4R10XJ472	4.7K	S 1	Q 2	2SD1819A	TRANSISTOR(SI) (or 2SC4155S)	S 1
R445,456	PQ4R10XJ000	0	S 2	Q 3	2SC2235	TRANSISTOR(SI)	1
R447,448	PQ4R10XJ562	5.6K	S 2	Q 4,5	2SD1819A	TRANSISTOR(SI) (or 2SC4155S)	S 2
R449	PQ4R10XJ472	4.7K	S 1	Q 7	2SD1819A	TRANSISTOR(SI) (or 2SC4155S)	S 1
R450,451	PQ4R10XJ563	56K	S 2	Q 8	POVTDTC143E	TRANSISTOR(SI) (or UN521L)	S 1
R501	ERDS2TJ220	22	1	Q 9	2SD1819A	TRANSISTOR(SI) (or 2SC4155S)	S 1
R502	PQ4R10XF1802	18K	S 1	Q10	2SB1218A	TRANSISTOR(SI) (or 2SA1576R)	S 1
R503	PQ4R10XF8662	86.6K	S 1	Q11	2SD1819A	TRANSISTOR(SI) (or 2SC4155S)	S 1
R504	PQ4R10XJ103	10K	S 1	Q12-18	POVTDTC143E	TRANSISTOR(SI) (or UN521L)	S 7
R505	ERJ6ENF4752	47.5K	S 1	Q19	2SD1819A	TRANSISTOR(SI) (or 2SC4155S)	S 1
R506	PQ4R10XJ473	47K	S 1	Q21,22	POVTDTC143E	TRANSISTOR(SI) (or UN521L)	S 2
R507	PQ4R10XJ332	3.3K	S 1	Q23	2SB1218A	TRANSISTOR(SI) (or 2SA1576R)	S 1
R508	PQ4R10XF8662	86.6K	S 1	Q24	2SB1322	TRANSISTOR(SI) (or 2SB1237R)	1
R509-511	PQ4R10XJ224	220K	S 3	Q25	POVTDTC143E	TRANSISTOR(SI) (or UN521L)	S 1
R512-514	PQ4R10XJ102	1K	S 3			(DIODES)	
R517	PQ4R10XJ103	10K	S 1	D 1	1SS120	DIODE(SI) (or 1SS131)	S 1
R518	PQ4R10XJ472	4.7K	S 1	D 2	MA143	DIODE(SI)	1
R601	ERDS2TJ332	3.3K	1	D 4	MA723	DIODE(SI)	1
R602	PQ4R10XJ821	820	S 1	D 5	MA141WA	DIODE(SI)	1
R603	ERDS2TJ332	3.3K	1	D 6,7	RLS71	DIODE(SI)	2
R604	PQ4R10XJ821	820	S 1	D 8	PQVDS1ZB40F1	DIODE(SI)	1
R701	PQ4R10XJ222	2.2K	S 1	D10	MA141WA	DIODE(SI)	1
R702	PQ4R10XJ105	1M	S 1	D11,12	MA728	DIODE(SI)	2
R703	PQ4R10XJ000	0	S 1	ZD1	MA4180	DIODE(SI)	S 1
R704	PQ4R10XJ472	4.7K	S 1	ZD2	PQVDHZS2B1	DIODE(SI)	S 1
R705	PQ4R10XJ101	100	S 1	ZD3,4	MA4056	DIODE(SI)	S 2
R706	PQ4R10XJ332	3.3K	S 1	ZD5,6	PQVDHZS2B1	DIODE(SI)	S 2
R707,708	PQ4R10XJ101	100	S 2			(CONNECTORS & JACKS)	
R709-711	PQ4R10XJ472	4.7K	S 3	CN 1-3	PQJS11A10Z	CONNECTOR, 11P	3
R712	PQ4R10XJ000	0	S 1	CN 4	PQJP10B11Z	CONNECTOR, 10P	1
R713-720	ERJ3GEYJ561	560	S 8	CN 5	PQJP2G30Z	CONNECTOR, 2P	1
		(CRYSTAL OSCILLATORS)		CN 6	PQJP02G100Z	CONNECTOR, 2P	1
X1	PQVCJ2400N9Z	CRYSTAL OSCILLATOR	1	CN 7	PQJJ1T004Z	JACK, TEL.	1
X2	PQVCJ1600N9Z	CRYSTAL OSCILLATOR	1	CN 8	PQJJ1TB18Z	JACK, HANDSET	1
X4	PQVCL3276N6Z	CRYSTAL OSCILLATOR	1	CN 9	PQJP07A92Z	CONNECTOR, 7P	1
				CN10	PQJP14A92Z	CONNECTOR, 10P	1
				CN11	PQJP2D68Z	CONNECTOR, 2P	1
						(CAPACITORS)	
				C 1	ECQE2E334KZ	0.33	1
				C 2,3	ECKD2H681KB	680P	2
				C 4	PQCUV1H103KB	0.01	1
				C 5	ECEA1HKS4R7	4.7	1
				C 6	ECEA1CKS100	10	1
				C 7	PQCUV1E333MD	0.033	1
				C 8	ECEA1CU221	220	1
				C 9	ECEA1CKS100	10	1
				C10	ECEA1HU470	47	S 1
				C11	PQCUV1E333MD	0.033	1
				C12	PQCUV1E104MD	0.1	S 1
				C14,15	PQCUV1E104MD	0.1	2
				C16	ECEA1AU101	100	S 1
				C17	ECEA1EU470	47	S 1
				C18	ECUV1H103KBV	0.01	1
				C20	ECUV1H102KBV	0.001	1
				C21	PQCUV1C683MD	0.068	1
				C22	ECUV1H680JCV	68P	1
				C23	PQCUV1C683MD	0.068	1
				C24	ECUV1H470JCV	47P	1
				C25	ECUV1H680JCV	68P	1
				C26	PQCUV1E104MD	0.1	S 1
ANALOG BOARD PARTS							
PCB2	PQLP10096M	ANALOG BOARD ASSY (RTL)	1				
		(ICs)					
IC1	PQVI672191F	IC	S 1				
IC2	PQVIS79164FU	IC	1				
IC3	PQVIMC34119M	IC	1				
IC4-6	PQVINJM4558M	IC	3				
IC7	PQVITC4053BF	IC	S 1				
IC8,9	PQVITC4066BF	IC	S 2				
IC10	PQVITA31081F	IC	1				
IC11	PQVINJM4558M	IC	1				
IC12	PQVITC7W04FL	IC	1				
IC13	PQVINJM4558M	IC	1				
IC15	PQVIS80732S	IC	1				

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Ref. No.	Part No.	Value, Part Name & Description	Pcs	Ref. No.	Part No.	Value, Part Name & Description	Pcs
C28	ECEA1HKS47	0.47	1	C110	ECUV1H333KDV	0.033	1
C29	ECUV1H104ZFB	0.1	S 1	C111	PQCUV1H393KB	0.039	S 1
C30	ECEA1AU221	220	S 1	C112	PQCUV1E104MD	0.1	S 1
C31,32	ECUV1H103KBV	0.01	2	C113	ECEA0JKS220	22	1
C33,34	PQCUV1C683MD	0.068	2	C114	ECEA1AU221	220	S 1
C35,36	ECUV1H392KBV	0.0039	2	C117	ECEA1AU101	100	S 1
C38	ECUV1H333JC	0.033	1	C118	ECEA1CKS100	10	1
C39	ECUV1H221JCV	220P	1	C119	PQCUV1E104MD	0.1	S 1
C40	ECEA1HKS4R7	4.7	1	C122	PQCUV1E104MD	0.1	S 1
C41	ECUV1H103KBV	0.01	1	C123	PQCUV1H223KB	0.022	1
C42	PQCUV1C683MD	0.068	1	C124	PQCUV1H561JC	560P	1
C43	ECEA1HKS010	1	1	C125	PQCUV1H103KB	0.01	1
C44	ECEA1HKS2R2	2.2	1	C126	ECUV1E153KBV	0.015	1
C45	ECEA1HKS010	1	1	C127	ECUV1H101JCV	100P	1
C46	PQCUV1C224ZF	0.22	1	C128	PQCUV1C224ZF	0.22	1
C47	ECUV1H561JCV	560P	1	C129	PQCUV1E104MD	0.1	1
C48	ECEA1CKS470	47	S 1	C130	ECUV1H103KBV	0.01	1
C49	ECEA0JU471	470	1	C131	PQCUV1H103KB	0.01	1
C50	ECEA1AU221	220	S 1	C132	ECUV1H681JCV	680P	1
C51	ECEA1HKS4R7	4.7	1	C133	PQCUV1E104MD	0.1	S 1
C52	ECEA1CKS100	10	1	C181	ECUV1H102KBV	0.001	1
C53	PQCUV1E104MD	0.1	1	C183,184	ECHU1C682GA	0.0068	2
C54	ECEA1EU101	100	S 1	C186,187	ECHU1C682GA	0.0068	2
C55	PQCUV1E473MD	0.047	1	C188	PQCUV1C224ZF	0.22	1
C57	ECUV1H822KBV	0.0082	1	C189	PQCUV1C683MD	0.068	1
C58	ECUV1H332KBV	0.0033	1	C202	ECUV1H102KBV	0.001	1
C59	ECUV1H103KBV	0.01	1	C211	PQCUV1E104MD	0.1	1
C60	ECUV1H103KBV	0.01	1	C212	PQCUV1E473MD	0.047	1
C61	PQCUV1E104MD	0.1	S 1	C225	PQCUV1E473MD	0.047	1
C62	ECEA1AU101	100	S 1	C226,227	ECUV1H333KDV	0.033	S 2
C63	ECUV1H103KBV	0.01	1				
C65	ECUV1H102KBV	0.001	1				
C70	ECUV1H331JCV	330P	1				
C71	ECUV1H223KBV	0.022	S 1				
C72	ECUV1H682KBV	0.0068	1				
C73	ECUV1H223KBV	0.022	S 1				
C74	PQCUV1C683MD	0.068	1	L1,2	PQLQR1ET	(COILS) COIL	2
C75	PQCUV1E333MD	0.033	1	L5-10	PQLQR2BT	COIL	S 6
C76	ECUV1H682KB	0.0068	1				
C77	ECUV1H682KBV	0.0068	1				
C80	ECEA1AU101	100	S 1	PC1	PQVIPC814K	(PHOTO ELECTRIC TRANSDUCERS) PHOTO COUPLER	S 1
C81,82	ECEA1HKS010	1	2	PC2	PQVITLP627	PHOTO COUPLER	S 1
C83	PQCUV1H102J	0.001	1	PC3,4	PQVIPC817CD	PHOTO COUPLER	S 2
C85	ECUV1H472KBV	0.0047	1	PS1-3	PQVIPS4506	SENSOR	S 3
C86	PQCUV1E333MD	0.033	1				
C87	ECUV1H103KBV	0.01	1				
C88,89	PQCUV1E104MD	0.1	S 2				
C90	ECUV1H223KBV	0.022	S 1	P0S1	PQRNBC120N	(THERMISTOR) THERMISTOR(POSISTOR)	S 1
C91	PQCUV1E104MD	0.1	S 1				
C92	ECUV1H102KBV	0.001	1				
C93	ECUV1H103KBV	0.01	1				
C95	ECUV1H103KBV	0.01	1				
C96	PQCUV1H105JC	1	1				
C97	PQCUV1C334ZF	0.33	1				
C99	ECEA1AU101	100	1				
C100	ECEA1EU101	100	S 1				
C101	ECUV1H104MD	0.1	S 1	C210	PQ4R10XJ0R00	(RESISTORS) 0	1
C102	ECEA1EU470	47	S 1	J 1,2	PQ4R18XJ000	0	2
C103	PQCUV1E104MD	0.1	1	J 3	PQ4R10XJ000	0	1
C104	ECEA1AU101	100	S 1	J 4,5	PQ4R18XJ000	0	2
C105	PQCUV1E104MD	0.1	1	J 6	PQ4R10XJ000	0	1
C106	ECEA1AU101	100	S 1	J 8	PQ4R10XJ0R00	0	1
C107	PQCUV1E104MD	0.1	1				
C108	PQCUV1E104MD	0.1	1				

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Ref. No.	Part No.	Value	Pcs	Ref. No.	Part No.	Value	Pcs
J12	PQ4R18XJ000	0	1	R1	ERDS1TJ473	47K	1
J13-15	PQ4R10XJ000	0	3	R2	PQ4R10XJ104	100K	S 1
J16	PQ4R10XJ0R00	0	1	R3	PQ4R10XJ472	4.7K	S 1
J17,18	PQ4R18XJ000	0	2	R4	ERDS2TJ5R6	5.6	1
J19	PQ4R10XJ000	0	1	R5	PQ4R10XJ103	10K	S 1
J21	PQ4R18XJ000	0	1	R6	PQ4R10XJ472	4.7K	S 1
J24	PQ4R18XJ000	0	1	R7	PQ4R10XJ330	33	S 1
J25	PQ4R10XJ000	0	2	R8	PQ4R10XJ393	39K	S 1
J30	PQ4R10XJ000	0	1	R9	PQ4R10XJ103	10K	S 1
J34	PQ4R18XJ000	0	1	R10	PQ4R10XJ682	6.8K	S 1
J35	PQ4R10XJ000	0	1	R11	PQ4R18XJ822	8.2K	S 1
J39	PQ4R10XJ0R00	0	1	R12	ERDS2TJ124	120K	1
J41-43	PQ4R18XJ000	0	3	R13	PQ4R10XJ103	10K	S 1
J45	PQ4R10XJ000	0	1	R14	ERJ3GEYJ564	560K	1
J47	PQ4R10XJ000	0	1	R15	ERJ3GEYJ682	6.8K	1
J49	PQ4R18XJ000	0	1	R16	ERJ3EKF2800	280	1
J50	PQ4R10XJ000	0	1	R17	ERJ3GEYJ182	1.8K	1
J51	PQ4R18XJ000	0	1	R18	ERJ3GEYJ473	47K	1
J52,53	PQ4R10XJ000	0	2	R19	ERJ3GEYJ103	10K	1
J54	PQ4R10XJ0R00	0	1	R20	PQ4R10XF1001	1K	1
J55,57	PQ4R10XJ000	0	2	R21,22	PQ4R10XJ104	100K	S 2
J56	PQ4R18XJ000	0	1	R23,24	ERJ3GEYJ104	100K	2
J58-61	PQ4R10XJ0R00	0	4	R25	ERJ3GEYJ681	680	1
J63	PQ4R10XJ000	0	1	R26	PQ4R10XJ621	620	S 1
J64	PQ4R18XJ000	0	1	R27	PQ4R10XJ202	2K	S 1
J65	PQ4R10XJ000	0	1	R28	ERJ3GEYJ244	240K	1
J66	PQ4R18XJ000	0	1	R29	ERJ3GEYJ224	220K	1
J67	PQ4R10XJ000	0	1	R30	ERJ3GEYJ223	22K	1
J72	PQ4R10XJ000	0	1	R31,32	ERJ3GEYJ222	2.2K	2
J73	PQ4R10XJ0R00	0	1	R33,34	ERJ3GEYJ102	1K	2
J74	PQ4R10XJ000	0	1	R35	ERJ3EKF2800	280	1
J75	PQ4R10XJ0R00	0	1	R36	ERJ3EKF4420	442	1
J88	PQ4R10XJ000	0	1	R37	ERJ3GEYJ333	33K	1
J89	PQ4R18XJ000	0	1	R40	PQ4R10XJ101	100	S 1
J90	PQ4R10XJ000	0	1	R41	PQ4R10XJ152	1.5K	S 1
J91,92	PQ4R10XJ0R00	0	2	R42	ERJ3GEYJ152	1.5K	1
J97	PQ4R18XJ000	0	1	R43-46	ERJ3GEYJ153	15K	4
J104	PQ4R18XJ000	0	1	R47	ERJ3GEYJ223	22K	1
J122	PQ4R10XJ000	0	1	R48	ERJ3GEYJ224	220K	1
J159,160	PQ4R18XJ000	0	2	R49	ERJ3GEYJ102	1K	1
J194	PQ4R10XJ0R00	0	1	R50	ERJ3GEYJ332	3.3K	1
J210	PQ4R10XJ000	0	1	R51	ERJ3GEYJ102	1K	1
J211	PQ4R18XJ000	0	1	R52	ERJ3GEYJ223	22K	1
J213	PQ4R10XJ000	0	1	R53	PQ4R10XJ0R00	0	1
J214	PQ4R18XJ000	0	1	R54	ERJ3GEYJ104	100K	1
J225	PQ4R18XJ000	0	1	R55	PQ4R10XJ220	22	S 1
J227	PQ4R10XJ000	0	1	R56	ERJ3GEYJ512	5.1K	1
J231	PQ4R10XJ000	0	1	R57	ERJ3GEYJ563	56K	1
J241,242	PQ4R10XJ000	0	2	R58,59	ERJ3GEYJ333	33K	2
				R60	ERJ3GEYJ333	33K	1
				R61	PQ4R10XJ681	680	S 1
				R63	ERJ3GEYJ224	220K	1
				R64	ERJ3GEYJ114	110K	1
				R65	PQ4R10XJ104	100K	S 1
				R66	PQ4R10XJ513	51K	S 1
				R67	ERJ3GEYJ472	4.7K	1
				R68	ERJ3GEYJ392	3.9K	1
				R69	PQ4R10XJ104	100K	S 1

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Ref. No.	Part No.	Value	Pcs	Ref. No.	Part No.	Value, Part Name & Description	Pcs
R70	ERJ3GEYJ103	10K	1	R145	ERJ3GEYJ103	10K	1
R71	ERJ3GEYJ154	150K	1	R146	ERJ3GEYJ392	3.9K	1
R72	ERJ3GEYJ103	10K	1	R147	ERJ3GEYJ473	47K	1
R74	ERJ3GEYJ334	330K	1	R148	ERJ3GEYJ272	2.7K	1
R75	ERJ3GEYJ335	3.3M	1	R149	PQ4R10XJ0R00	0	1
R76	ERJ3GEYJ223	22K	1				
R77	ERJ3GEYJ275	2.7M	1	R150	ERJ3GEYJ473	47K	1
R78,79	ERJ3GEYJ222	2.2K	2	R151	PQ4R10XJ103	10K	1
				R152	ERJ3GEYJ121	120	1
R80	PQ4R10XJ223	22K	1	R153	ERJ3GEYJ511	510	1
R81	ERJ3GEYJ683	68K	1	R154	ERJ3GEYJ162	1.6K	1
R82	ERJ3GEYJ333	33K	1	R155	ERJ3GEYJ302	3K	1
R83	ERJ3GEYJ223	22K	1	R156,157	ERJ3GEYJ103	10K	2
R84	ERJ3GEYJ473	47K	1	R158	ERJ3GEYJ394	390K	1
R85	ERJ3GEYJ153	15K	1	R159	PQ4R10XJ103	10K	1
R86	ERJ3GEYJ683	68K	1				
R87	PQ4R10XJ0R00	0	1	R160	ERJ3GEYJ123	12K	1
R89	ERJ3GEYJ223	22K	1	R161	ERJ3GEYJ102	1K	1
				R162	ERJ3GEYJ563	56K	1
R90	ERJ3GEYJ223	22K	1	R163	ERJ3GEYJ222	2.2K	1
R91	PQ4R10XJ333	33K	1	R164	PQ4R10XJ332	3.3K	1
R92,93	PQ4R10XJ103	10K	2	R165	ERJ3GEYJ123	12K	1
R95	ERJ3GEYJ153	15K	1	R166	ERJ3GEYJ103	10K	1
R97	PQ4R10XJ000	0	1	R167	PQ4R10XJ0R00	0	1
R98	PQ4R10XJ682	6.8K	1	R169	PQ4R10XJ202	2K	1
R100	ERDS2TJ4R7	4.7	1	R172	PQ4R10XJ000	0	1
R101	ERJ3GEYJ103	10K	1	R173	ERJ3GEYJ824	820K	1
R102	PQ4R10XJ103	10K	1	R174	ERJ3GEYJ223	22K	1
R103	ERJ3GEYJ474	470K	1	R175	PQ4R10XJ0R00	0	1
R104	ERJ3GEYJ183	18K	1	R177,178	ERJ3GEYJ103	10K	2
R105	ERJ3GEYJ104	100K	1				
R106	ERJ3GEYJ103	10K	1	R180	ERJ3GEYJ104	100K	1
R107	ERJ3GEYJ564	560K	1	R181	PQ4R10XJ223	22K	1
R108	ERJ3GEYJ105	1M	1	R182	ERJ3GEYJ104	100K	1
R109	ERJ3GEYJ473	47K	1	R183	PQ4R10XJ000	0	1
				R186,187	ERJ3EKF2102	21K	2
R110	ERJ3GEYJ563	56K	1	R188	ERJ3EKF1022	10.2K	1
R111	ERJ3GEYJ333	33K	1	R189	ERJ3GEYJ105	1M	1
R112	ERJ3GEYJ153	15K	1				
R113	ERJ3GEYJ103	10K	1	R190	ERJ3GEYJ271	270	1
R114	ERJ3GEYJ473	47K	1	R191	PQ4R10XJ182	1.8K	1
R115	ERJ3GEYJ153	15K	1	R192	PQ4R10XJ222	2.2K	1
R116	ERJ3GEYJ223	22K	1	R197	ERJ3GEYJ104	100K	1
R117	ERJ3GEYJ473	47K	1				
R118	ERJ3GEYJ101	100	1	R203	ERJ3GEYJ220	22	1
R119	ERJ3GEYJ563	56K	1	R206	ERJ3GEYJ101	100	1
R120	PQ4R10XJ331	330	1	R210	ERJ3GEYJ105	1M	1
R121	ERJ3GEYJ563	56K	1				
R122	PQ4R10XJ331	330	1	R231	PQ4R10XJ000	0	1
R123	ERJ3GEYJ563	56K	1				
R124	PQ4R10XJ331	330	1				
R125	ERJ3GEYJ473	47K	1	SA1,2	PQVDRA311PT2	(VARISTORS)	2
R126	ERJ3GEYJ101	100	1	SA3	PQVDDSA102MS	VARISTOR (SURGE ABSORBER) VARISTOR (SURGE ABSORBER)	1
R127	ERJ3GEYJ103	10K	1				
R128	PQ4R10XJ103	10K	1				
R129	PQ4R10XJ103	10K	1	S1	ESE14A211	(SWITCHES) SWITCH, HOOK	1
				SW2	PQSS2A27Z	SWITCH	1
R130	PQ4R10XJ472	4.7K	1				
R131	ERJ3GEYJ105	1M	1				
R132	ERJ3GEYJ472	4.7K	1	T1	PQLT8E7A	(TRANSFORMERS) TRANSFORMER Δ	1
R133	ERJ3GEYJ124	120K	1	T2	PQLT8D2A	TRANSFORMER Δ	1
R135	ERJ3GEYJ223	22K	1				
R136	ERJ3GEYJ473	47K	1				
R138	ERJ3GEYJ271	270K	1	E1	PQHR9451Y	(OTHER) SPACER FOR HOOK SWITCH	1
R139	ERJ3GEYJ563	56K	1				
R140	ERJ3GEYJ472	4.7K	1				
R143	ERJ3GEYJ222	2.2K	1				
R144	ERJ3GEYJ223	22K	1				

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Ref. No.	Part No.	Value, Part Name & Description	Pcs	Ref. No.	Part No.	Value, Part Name & Description	Pcs
OPERATION BOARDS PARTS				J371	PQ4R18XJ000	0	S 1
PCB3	PQLP10101M	OPERATION BOARD ASS'Y (RTL) ASS'Y (RTL)	1	J373	PQ4R10XJ000	0	S 1
				J374	PQ4R18XJ000	0	S 1
				J376	PQ4R10XJ000	0	S 1
				J383	PQ4R18XJ000	0	S 1
IC301	MN53007QAF	(ICs) IC	1	J384	PQ4R10XJ000	0	S 1
				J390	PQ4R18XJ000	0	S 1
IC302	PQVISN7H138S	IC	S 1	J392	PQ4R10XJ000	0	S 1
				J395	PQ4R18XJ000	0	S 1
Q301,302	PQVTDTC114EU	(TRANSISTORS) TRANSISTOR(SI)	2	R301	PQ4R10XJ222	2.2K	S 1
				Q303	PQVTDTA143EU	TRANSISTOR(SI)	1
D301,302	1SS131	(DIODES) DIODE(SI) (or 1SS120)	S 2	R304-306	PQ4R10XJ222	2.2K	S 3
				R307-312	PQ4R10XJ181	180	S 6
D320-324	1SS131	DIODE(SI) (or 1SS120)	S 5	R320	PQ4R18XJ181	180	S 1
				R321-327	PQ4R10XJ181	180	S 7
LED302,303,301A	PQVDSR325CA47	LED	3	R328-335	PQ4R10XJ222	2.2K	S 8
				R336	PQ4R18XJ102	1K	S 1
CN301	PQJP8G43Y	(CONNECTORS) CONNECTOR, 8P	1	R337,338	PQ4R10XJ102	1K	S 2
				R347,348	PQ4R10XJ222	2.2K	S 2
CN302	PQJS10X59Z	CONNECTOR, 10P	1	R349,350	PQ4R18XJ222	2.2K	S 2
				R351-353	PQ4R10XJ222	2.2K	S 3
CN303	PQJP2G30Z	CONNECTOR, 2P	1	R354-356	PQ4R10XJ471	470	S 3
				R360	PQ4R10XJ821	820	S 1
C301	PQCUV1E104MD	(CAPACITORS) 0.1	1	R361	PQ4R10XJ000	0	S 1
				R363	PQ4R10XJ821	820	S 1
C302	ECEA1AKS221	220	1	R370	PQ4R18XJ331	330	S 1
				C303	ECUV1H104MD	0.1	S 1
C304	PQCUV1E104MD	0.1	1	R372,373	PQ4R10XJ563	56K	S 2
				C305	PQCUV1H122KB	0.0012	1
C308	PQCUV1H471JC	470P	1	R381	PQ4R10XJ473	47K	S 1
				C309	ECUV1H101JC	100P	1
C310	PQCUV1H103KB	0.01	S 1	S301,302	EVQ21405R	(SWITCHES) SWITCH	2
C320	PQCUV1E104MD	0.1	1	S307-316	EVQ21405R	SWITCH	10
				C340	ECUV1H104MD	0.1	S 1
C341	PQCUV1E104MD	0.1	1	S322-325	EVQ21405R	SWITCH	4
				C342	PQCUV1H101JC	100P	1
C343,344	ECUV1H331JC	330P	2	S330	EVQ21405R	SWITCH	1
				C345-348	PQCUV1E104MD	0.1	4
PI301,302	PQVISGKP01	(PHOTO ELECTRIC TRANSDUCERS) SENSOR	2	S337-339	PQSH1A43Z	SWITCH	S 3
				S303A	EVQ21405R	SWITCH	1
J332,333	PQ4R18XJ000	0	S 2	S306A	EVQ21405R	SWITCH	1
				J339	PQ4R18XJ000	0	S 1
J351	PQ4R18XJ000	0	S 1	,336A			
				J356	PQ4R18XJ000	0	S 1
J357	PQ4R10XJ000	0	S 1	S380A	PQSH1A101Z	SWITCH	1
				J362	PQ4R10XJ000	0	S 1
J365	PQ4R18XJ000	0	S 1				
				J367	PQ4R18XJ000	0	S 1

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Ref. No.	Part No.	Value, Part Name & Description	Pcs	Ref. No.	Part No.	Part Name & Description	Pcs
LCD BOARD PARTS				SWITCHING POWER SUPPLY BOARD PARTS			
PCB4	PQLP10111M	LCD BOARD ASS'Y (RTL)	1	VR801	EVNDXAA03B23	(VARIABLE RESISTOR) SEMI-FIXED RESISTOR, 2K (B)	1
IC391	PQVIHD44780	(IC) IC	S 1	SWITCHING POWER SUPPLY BOARD PARTS			
CN391	PQJS10X53Z	(CONNECTOR) CONNECTOR, 10P	1	PCB6	PQLP10109M	POWER SUPPLY BOARD ASS'Y (RTL)	1
C391,392	PQCUV1E104MD	(CAPACITORS) 0.1	2	IC101	PQVIFA5311S	(ICs) IC	1
R391-395	PQ4R10XJ162	(RESISTORS) 1.6K	S 5	IC201	AN1431T	IC	1
R396	PQ4R10XF9092	90.9K	S 1	Q101	PQVTFS10TM10	(TRANSISTORS) TRANSISTOR(SI)	1
E10	PQADDLC9922	(OTHERS) LIQUID CRYSTAL DISPLAY	1	Q202	2SC3568	TRANSISTOR(SI)	1
E11	PQJE10068Y	CONNECTOR	2	Q203	2SC4040R	TRANSISTOR(SI)	1
E12	PQMH10192Z	FRAME	1	Q204,205	2SA933	TRANSISTOR(SI)	2
CCD BOARD PARTS				D101	PQVDD2SBA60	(DIODES) DIODE(SI)	1
PCB5	PQWP2F500M	CCD BOARD ASS'Y (RTL)	1	D102	PQVDERA1506	DIODE(SI)	1
IC801	PQWP2F500M	(IC) CCD BOARD ASS'Y (RTL)		D103,105	MA4220	DIODE(SI)	2
Q801,802	2SB1218A	(TRANSISTORS) TRANSISTOR(SI)	S 2	D104,106	PQVDERA1802	DIODE(SI)	2
Q803	2SD1819A	(or 2SA1576R, 2sa1602f, 2sa1603F) TRANSISTOR(SI) (or2SC4155R)	S 1	D201	MA6D49	DIODE(SI)	1
CN801	PQJS08Q63Z	(CONNECTOR) CONNECTOR, 8P	1	D202	PQVDERA1502	DIODE(SI)	1
C801	ECEA1CKS101	(CAPACITORS) 100	1	D203	MA4030	DIODE(SI)	1
C802,803	PQCUV1E104MD	0.1	2	D204	PQVDERA1802	DIODE(SI)	1
J801-803	PQ4R10XJ000	(RESISTORS) 0	S 3	D205,206	PQVDAK04	DIODE(SI)	2
J804-806	PQ4R18XJ000	0	S 3	D207	MA4051	DIODE(SI)	1
R801,802	PQ4R10XJ101	100	S 2	D208	MA165	DIODE(SI)	1
R803	PQ4R10XJ331	330	S 1	D209	PQVDAK04	DIODE(SI)	1
R804	PQ4R10XJ101	100	S 1	D210	MA2300	DIODE(SI)	1
R805,806	PQ4R10XJ202	2K	S 2	D211	MA4150	DIODE(SI)	1
R807	PQ4R10XJ242	2.4K	S 1	CN31	PQJP2D98Z	(CONNECTORS) CONNECTOR, 2P	1
R808	PQ4R10XJ682	6.8K	S 1	CN301	PQJP6G100Z	CONNECTOR, 6P	1
R809	PQ4R10XJ180	18	S 1	CN302	PQJSA10XE1	CONNECTOR, 10P	1
R810	PQ4R10XJ132	1.3K	S 1	C101	ECQU2A104MN	(CAPACITORS) 0.1	1
R811,812	PQ4R10XJ161	160	S 2	C102,103	ECKDRS102MB	0.001	2
R815	PQ4R10XJ242	2.4K	S 1	C104	ECKDRS222ME	0.0022	1
R816	PQ4R10XJ682	6.8K	S 1	C105	EETLD2D331C	330	1
R817	PQ4R10XJ222	2.2K	S 1	C106	ECKD3A221KBN	220P	1
R819	PQ4R10XJ102	1K	S 1	C107	ECUV1H221JC	220P	1
				C108	ECUV1H104MD	0.1	1
				C109	PQCUV1H561JC	560P	1
				C111	ECUV1H473MD	0.047	1
				C112	ECA1VHG330	33	1
				C113	ECQU2A473MN	0.047	1
				C201	EEUFA1V103	1000	1
				C202	ECQB1H104KF	0.1	1
				C203	ECQB1H473JF	0.047	1
				C204	ECQB1H103JF	0.01	1
				C205	PQCEA16B220	220	1
				C206	PQCEA10B1000	1000	1
				C207	ECA1CHG221	220	1
				C208	ECA1AHG101	100	1
				C209	ECQB1222KF	0.0022	1

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Ref. No.	Part No.	Value, Part Name & Description	Pcs	Ref. No.	Part No.	Value, Part Name & Description	Pcs
				DIGITAL TAM PARTS			
C210	ECQV1H224JZ	0.22	1	PCB7	PQLP10105M	DIGITAL TAM BOARD ASS'Y (RTL)	1
C211	ECKD3A102KBN	0.001	1			(ICs)	
		(FUSE)		IC701	PQVID6305ADW	IC	1
F101	PQBA1C50NBKL	FUSE Δ	1	IC702	PQVIMC5480D	IC	1
		(COILS)		IC703	PQVIKM5040AC	IC	1
L101,102	ELF18D290	COIL	2			(CONNECTORS)	
L103	EXCELD35	COIL (BASE CORE)	1	CN701	PQJS14A56Y	CONNECTOR, 14 PIN	1
				CN702	PQJS07A56Y	CONNECTOR, 7 PIN	1
L201	PQLQ681388A	COIL, CHOKE	1			(COIL)	
		(PHOTO ELECTRIC TRANSDUCER)		L701	PQLQR1ET	COIL	1
PC101	PQVIPC817CD	PHOTO COUPLER Δ	1			(CRYSTAL OSCILLATOR)	
		(RELAY)		X701	PQVCG2949N5Z	CRYSTAL OSCILLATOR	1
RL201	PQSLG5P1	RELAY	1			(CAPACITORS)	
		(RESISTORS)		C701	PQCUV1H105JC	1	S 1
R101	ERDS1FJ105	1M	1	C703	PQCUV1H105JC	1	S 1
R102,103	ERG1SJ333	33K	2	C704,705	ECUV1H100DCV	10P	2
R104	ERG1SJU100	10	1	C706,707	ECUV1H104ZFV	0.1	S 2
R105	ERX1SJR33	0.33	1	C708-711	ECUV1H104ZFV	0.1	S 4
R106	PQ4R18XJ471	470	1				
R107	PQ4R18XJ562	5.6K	1	C713	ECUV1H104ZFV	0.1	S 1
R108	PQ4R18XJ222	2.2K	1	C714-720	ECUV1H150JCV	15P	7
R109	ERDS2TJ220	22	1				
				C721	ECUV1H104ZFV	0.1	S 1
R110	ERDS2TJ103	10K	1	C723-729	ECUV1H150JCV	15P	7
R111	ERDS2TJ150	15	1			(RESISTORS)	
R112	PQ4R18XJ101	100	1	R701	ERJ3GEYJ105	1M	1
R113	ERX1SJR33	0.33	1	R702	ERJ3GEYJ103	10K	1
R114	PQ4R18XJ181	180	1	R703	ERJ3GEYJ103	10K	1
R115	ERDS2TJ220	22	1	R704	ERJ3GEYJ102	1K	1
				R705	ERJ3GEYJ221	220	1
R201	ERDS2TJ681	680	1	R706-712	ERJ3GEYJ221	220	7
R202	ERDS2TJ163	16K	1	R713	ERJ3GEYJ271	270	1
R203	ERDS2TJ222	2.2K	1				
R204	ERDS1FJ151	150	1	FIXTURES AND TOOL			
R205	ERDS2TJ152	1.5K	1	EC1	PQZZ11K8Z	EXTENSION CORD, 11P	3
R206	ERDS2TJ563	56K	1	EC2	PQZZ8K18Z	EXTENSION CORD, 8P	2
				EC3	PQZZ2K12Z	EXTENSION CORD, 2P	2
R210	ERDS2TJ122	1.2K	1	EC4	PQZZ8K15Z	EXTENSION CORD, 8P	1
R211	ERDS2TJ152	1.5K	1	EC5	PQZZ5K6Z	EXTENSION CORD, 5P	2
R213	ERDS2TJ101	100	1	EC6	PQZZ4K5Z	EXTENSION CORD, 4P	1
		(THERMISTOR)		EC7	PQZZ2K6Z	EXTENSION CORD, 2P	1
TH101	PQRR8D11F2	THERMISTOR	1	EC8	PQZZ10K11Z	EXTENSION CORD, 10P	1
		(TRANSFORMERS)		EC9	PQZZ6K14Z	EXTENSION CORD, 6P	1
T101	ETS29AE115A	TRANSFORMER, SWITCHING	1	EC10	PQZZ2K13Z	EXTENSION CORD, 2P	1
T201	ETS22AE149A	TRANSFORMERS	1	EC11	PQZZ3K7Z	EXTENSION CORD, 3P	1
		(VARIABLE RESISTOR)					
VR201	EVNDJAA03B53	SEMI-FIXED RESISTOR, 5K (B)	1		PQZZF500M	CCD TOOL	1
		(VARISTORS)			PQZZ2F500M	SPRING HEIGHT TOOL	1
Z101	ERZC10DK471	VARISTOR	1	Notes:			
Z102,103	ERZC10DK911U	VARISTOR	2	1. CCD Tool, Spring Height Tool and			
Z104	ERZC10DK751U	VARISTOR	1	Extension Cords (Ref. No. EC2, EC3)			
				are necessities for servicing.			
				2. Extension Cords (Ref. No. EC1, EC4-EC11)			
				are useful for servicing.			
				(They make servicing easy.)			