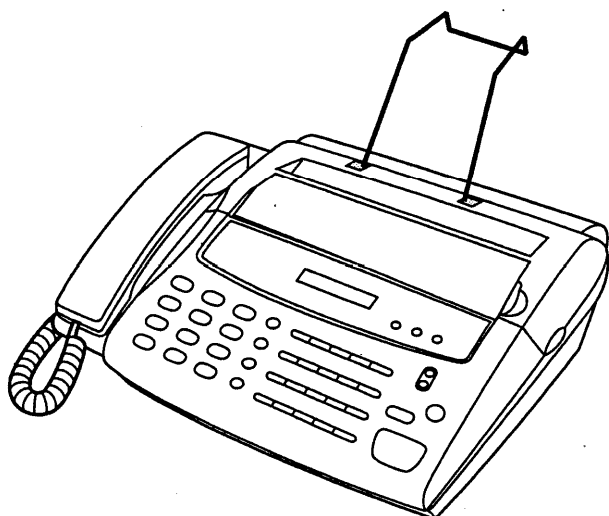


SHARP SERVICE MANUAL

No. 00ZFO155A/SME



FACSIMILE

FO-155

MODEL FO-355

The FO-355A is a model with cutter, and the FO-155A is a model without cutter. This manual explains the FO-355A.

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PARTS GUIDE

Parts marked with "△" is important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

CAUTION FOR BATTERY REPLACEMENT

(Danish)

ADVARSEL !

Lithiumbatteri-Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandoren.

(English)

Caution !

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type
recommended by the equipment manufacturer.
Discard used batteries according to manufacturer's
instructions.

(Finnish)

VAROITUS

Paristo voi räjähtää, jos se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan
tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden
mukaisesti.

(French)

ATTENTION

Il y a danger d'explosion s' il y a remplacement incorrect
de la batterie. Remplacer uniquement avec une batterie du
même type ou d'un type recommandé par le constructeur.
Mettre au rebut les batteries usagées conformément aux
instructions du fabricant.

(Swedish)

WARNING

Explosionsfare vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent
typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens
instruktion.

(German)

Achtung

Explosionsgefahr bei Verwendung inkorrektter Batterien.
Als Ersatzbatterien dürfen nur Batterien vom gleichen Typ oder vom
Hersteller empfohlene Batterien verwendet werden.
Entsorgung der gebrauchten Batterien nur nach den vom Hersteller
angegebenen Anweisungen.

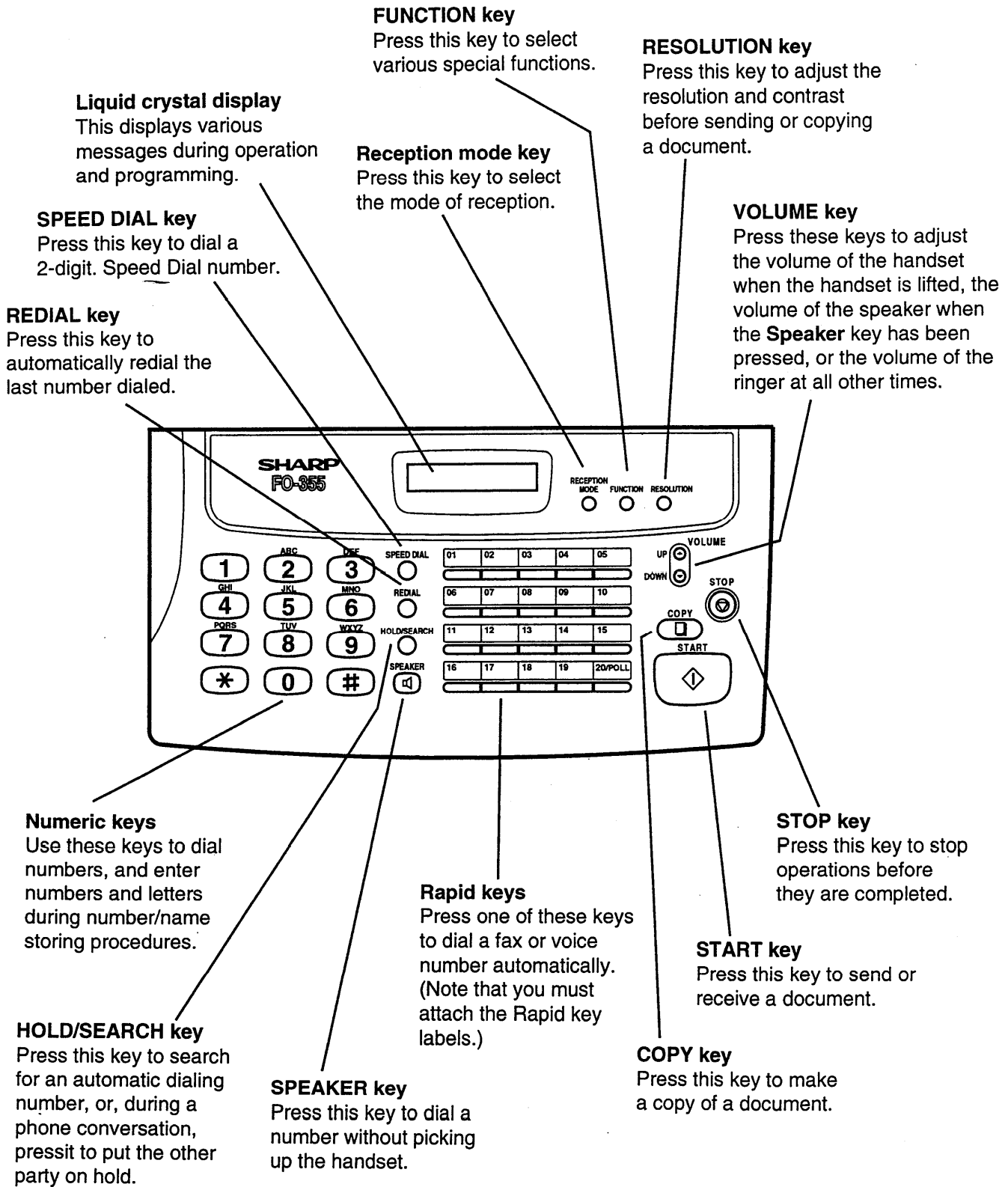
CHAPTER 1. GENERAL DESCRIPTION

[1] SPECIFICATIONS

Applicable telephone line:	Public switched telephone network /PBX	Effective scanning width:	210 mm
Compatibility:	ITU-T (CCITT) G3 mode	Automatic document feeder:	20 sheets max.
Configuration:	Half-duplex, desktop transceiver	Halftone (gray scale):	64 levels
Compression scheme:	Modified Huffman and Sharp special mode	Contrast control:	Automatic/Dark selectable
Scanning method:	Flat-bed, solid-state CCD	Copy function:	Standard
Resolution:	Horizontal: 8 dot/mm Vertical: Standard—3.85 lines/mm Fine/Halftone—7.7 lines/mm Super fine—15.4 lines/mm	Telephone function:	Standard (cannot be used if power fails)
Recording system:	Thermal recording	Noise emission:	Less than 70 dBA (Measured according to DIN 45635.)
Display:	7 x 5 dots, 1 line by 16-digit display	Power requirements:	230-240 V AC, 50/60 Hz
Automatic cutter:	Standard (to length of original)	Operating temperature:	5 to 35°C
Reception modes:	Auto/Manual	Power consumption:	Stand-by: 6 W Maximum: 120 W
Modem speed:	9600 bps with automatic fallback to 7200, 4800, or 2400 bps	Dimensions:	Width: 352 mm Depth: 294 mm Height: 130 mm
Transmission time* :	Approx. 15 seconds (Sharp special mode)	Weight:	Approx. 3.5kg
Effective recording width:	210 mm, max.	* Based on ITU-T (CCITT) Test Chart #1 at standard resolution in Sharp special mode, excluding time for protocol signals (i.e., ITU-T phase C time only).	
Input document size:	Automatic feeding: Width — 216 mm Length — 128 to 297 mm Manual feeding: Width — 216 mm Length — 128 to 1000 mm		

As a part of our policy of continuous improvement, SHARP reserves the right to make design and specification changes for product improvement without prior notice. The performance specifications figures indicated are nominal values of production units. There may be some deviation from these values in individual units.

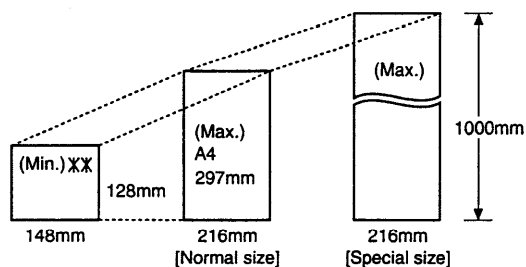
[2] Operation Panel



[3] Transmittable Documents

1. Document Sizes

Normal size	width	148 – 216 mm
	length	128 – 297 mm



XX Use document carrier sheet for smaller documents.

- * With special sizes, only one sheet can be fed into the machine at a time. Insert next page into feeder as current page is being scanned.

2. Paper Thickness & Weight

Normal size	ADF 10 sheets	Thickness	0.06–0.12 mm
		Weight	52–104 g/m ²
	ADF 20 sheets	Thickness	0.06–0.09 mm
		Weight	52–74.3 g/m ²
Special size	Thickness	0.12–0.20 mm	
	Weight	52–157 g/m ²	

3. Document Types

- Normal paper
Documents handwritten in pencil (No. 2 lead or softer), fountain pen, ball-point pen, or felt-tipped pen can be transmitted. Documents of normal contrast duplicated by a copying machine can also be transmitted.
- Diazo copy (blue print)
Diazo copy documents of a normal contrast may be transmitted.
- Carbon copy
A carbon copy may be transmitted if its contrast is normal.

4. Cautions on Transmitting Documents

- Documents written in yellow, greenish yellow, or light blue ink cannot be transmitted.
- Ink, glue, and correcting fluid on documents must be dry before the documents can be transmitted.
- All clips, staples and pins must be removed from documents before transmission.
- Patched (taped) documents should be copied first on a copier and then the copies used for transmission.
- All documents should be fanned before insertion into the feeder to prevent possible double feeds.

5. Automatic Document Feeder Capacity

Number of pages that can be placed into the feeder at anytime is as follows:

Normal size: max. ADF 20 sheets

Special size: single sheet only (manual feed)

- NOTES:
- When you need to send or copy more pages than the feeder limit, place additional pages in feeder when last page in feeder is being scanned.
 - Place additional pages carefully and gently in feeder. If force is used, double-feeding or a document jam may result.

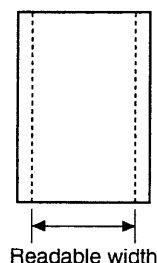
6. Readable Width & Length

The readable width and length of a document are slightly smaller than the actual document size.

Note that characters or graphics outside the effective document scanning range will not be read.

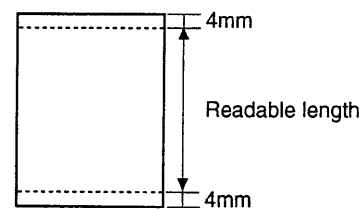
• Readable width

210 mm, max.



• Readable length

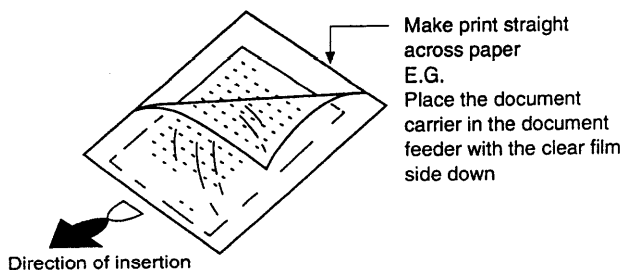
This is the length of the document sent minus 4 mm from the top and bottom edges.



7. Use of Document Carrier Sheet

A document carrier sheet must be used for the following documents.

- Those with tears.
- Those smaller than size 148 mm (W) x 128 mm (L).
- Carbon-backed documents



NOTE: To transmit a carbon-backed document, insert a white sheet of paper between the carbon back of the document and the document carrier.

- Those containing an easily separable writing substance (e.g., tracing paper written on with a soft, heavy lead pencil).

- NOTES:**
- When using the document carrier, carefully read the instructions written on the back.
 - If the document carrier is dirty, clean it with a soft, moist cloth, and then dry it before using for transmission.
 - Do not place more than one document in the carrier at a time.

[4] Installation

1. Site selection

Take the following points into consideration when selecting a site for this model.

ENVIRONMENT

- The machine must be installed on a level surface.
- Keep the machine away from air conditioners, heaters, direct sunlight, and dust.
- Provide easy access to the front, back, and sides of the machine.
In particular, keep the area in front of the machine clear, or the original document may jam as it comes out after scanning.
- The temperature should be between 5° and 35°C.
- The humidity should be between 30% and 85% (without condensation).

ELECTRICITY

230-240V, 50/60 Hz, grounded (3-prong) AC outlet is required.

Caution!

- Connection to a power source other than that specified will cause damage to the equipment and is not covered under the warranty.
- If your area experiences a high incidence of lightning or power surges, we recommend that you install a surge protector for the power and telephone lines. Surge protectors can be purchased at most telephone specialty stores.

If the machine is moved from a cold to a warm place...

If the machine is moved from a cold to a warm place, it is possible that the reading glass may fog up, preventing proper scanning of documents for transmission. To remove the fog, turn on the power and wait approximately 2 hours before using the machine.

TELEPHONE JACK

A standard RJ-11C telephone jack must be located near the machine. This is the telephone jack commonly used in most homes and offices.

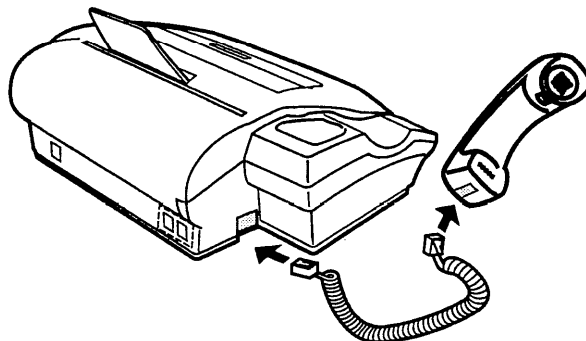
- Plugging the fax machine into a jack which is not an RJ-11C jack may result in damage to the machine or your telephone system. If you do not know what kind of jack you have, or needed to have one installed, contact the telephone company.

2. Assembly and connections

- ① Connect the handset cord to the handset and the fax as shown.

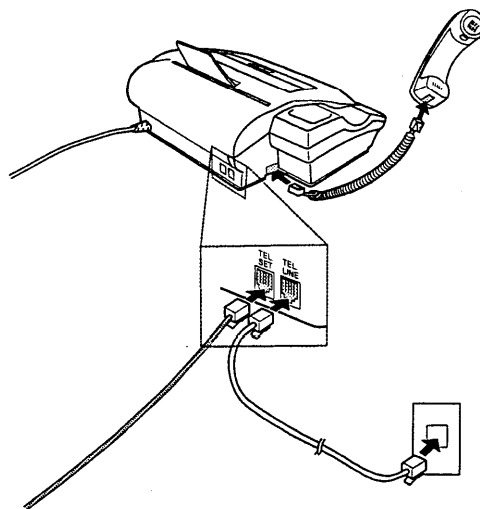
- The ends of the handset cord are identical, so they will go into either socket.

Place the handset on the handset rest.



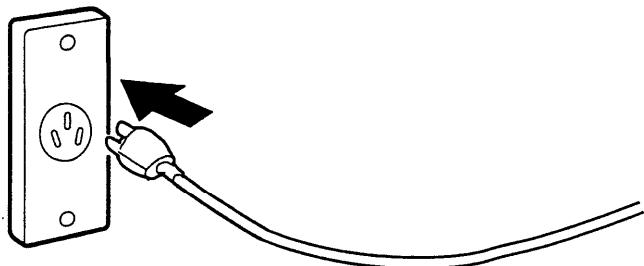
- ② Insert one end of the line cord into the socket on the back of the machine marked **TEL. LINE**. Insert the other end into a wall telephone socket.

- Be sure to plug the line cord into the **TEL. LINE** socket. Do not plug it into the **TEL. SET** socket. (Note: The **TEL. SET** socket is not available in some countries.)



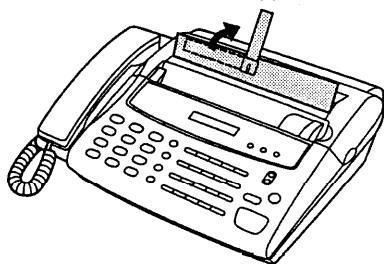
③ Plug the power cord into a 220-240V, 50/60Hz, grounded AC outlet.

- **Caution:** The mains outlet (socket-outlet) shall be installed near the equipment and shall be easily accessible.
- The fax does not have a power on/off switch, so the power is turned on and off by simply plugging in or unplugging the power cord.

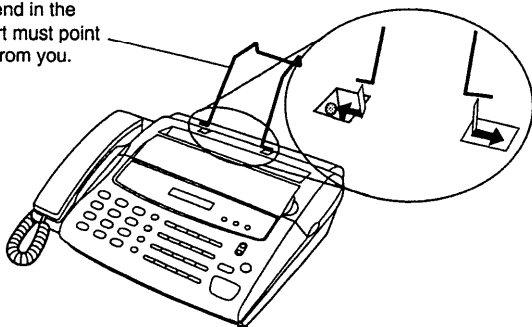


④ Attach the original document support by inserting the tabs into the holes at the top, rear of the fax.

- Flip up the wire extender on the support.



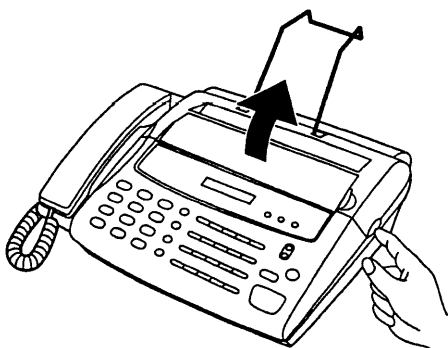
The bend in the support must point away from you.



4. Loading the recording paper

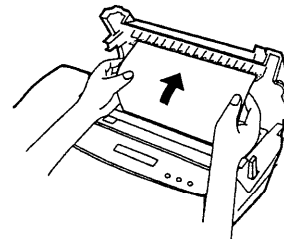
① Grasp the finger hold on the front and center of the paper compartment cover, and pull up to open the cover. Remove the packing paper from the paper compartment.

- **Caution!** If you are replacing the paper, do not touch the metal strip in the compartment. It may be hot if a document has just been printed.



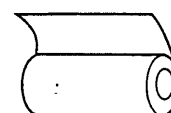
② Unwrap the roll of fax paper and insert it in the compartment.

- Make sure the hubs on each side of the compartment fit into the ends of the roll. The hub on the left side is mounted on a spring to allow for insertion.
- **Important:** The roll must be placed so that the leading edge of the paper feeds from over the top of the roll. (The paper is only coated on one side for printing. If the roll is placed upside down, the paper will come out blank after printing.)



YES

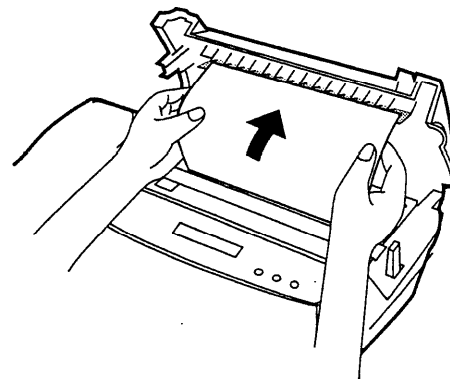
NO



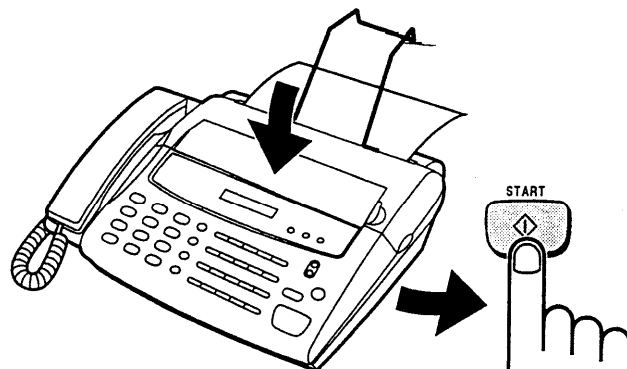
Note: The paper roll provided is only a sample roll which is approximately 50 m long.

THERMAL PAPER (50m roll): FO-40PRw

③ Pass the leading edge of the paper over the roller and through the outlet in the paper compartment cover. Remove any slack.




④ Close the cover and then press the START key. A short length of the fax paper will feed out. Grasp the paper by the edge and pull upward to tear it off.














[5] Quick reference guide

Use this guide as a convenient reminder for operating the machine after you have read the detailed instructions for each procedure in the manual.



Note:

- Steps which are optional are enclosed in a dotted frame: 

Transmitting documents

Normal Dialing	Load document →  → Lift handset or press SPEAKER → Dial (press numeric keys) →  → Hang up
Direct Keypad Dialing	Load document →  → Dial (press numeric keys) → 
Rapid Key Dialing	Load document →  → Press Rapid key
Speed Dialing	Load document →  →  → Enter Speed Dial number (press 2 numeric keys) → 
Redialing	Load document →  →  → Wait for reception tone → 






Making voice calls

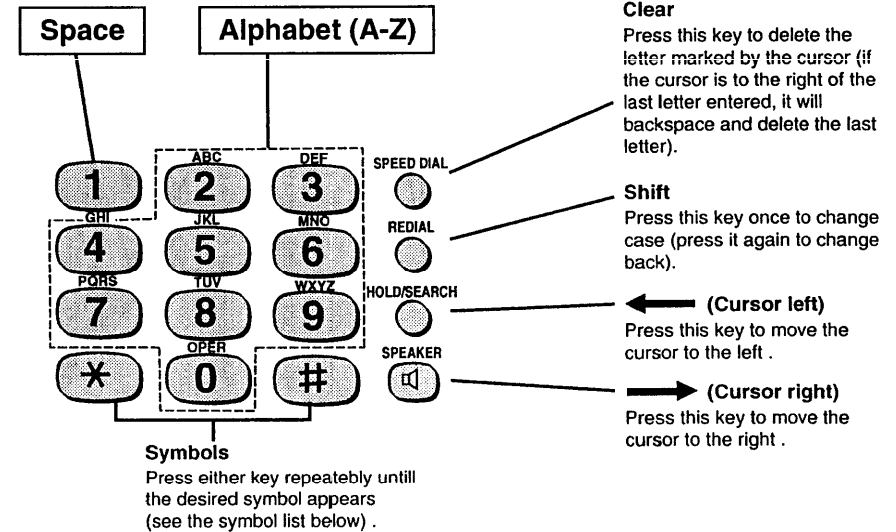
Normal Dialing	Lift handset or press SPEAKER → Dial (press numeric keys) → Lift handset if you pressed SPEAKER
Rapid Key Dialing	Lift handset or press SPEAKER → Press Rapid key → Lift handset if you pressed SPEAKER
Speed Dialing	Lift handset or press SPEAKER →  → Enter Speed Dial number (press 2 numeric keys) → Lift handset if you pressed SPEAKER
Redialing	Lift handset or press SPEAKER →  → Lift handset if you pressed SPEAKER

FUNCTION key menu

The following chart shows the layout of the functions and settings accessed by pressing the **FUNCTION** key. First press the **FUNCTION** key, the appropriate numeric key as shown, and then "*" or "#" until the desired item appears.

Instructions for making each setting appear in the display. If you have any difficulty, refer to the detailed instructions on the page shown below the setting.

Printing out lists	 2 → * or # (Press until desired item appears)
Entering your name and FAX number	 3 → # #
Setting the date and time	 3 → * *
Storing Numbers For Automatic Dialing	 3 → # → 1 or 2
Setting User Switches	 4 → * or # (Press until desired item appears)



CHAPTER 2. ADJUSTMENTS

[1] Adjustments

General

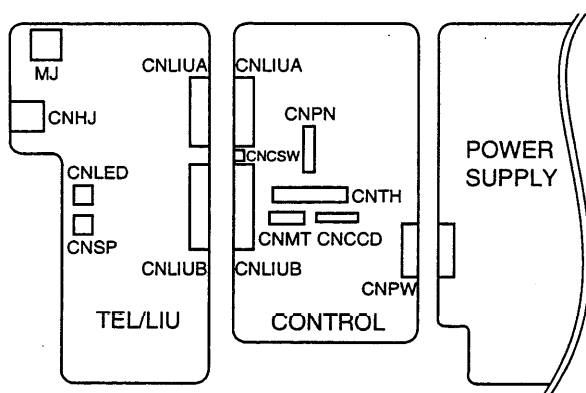
Since the following adjustments and settings are provided for this model, make adjustments and/or setup as necessary.

1. Adjustments

Adjustments of output voltage (FACTORY ONLY)

1. Install the power supply unit in the machine.
2. Set the recording paper and document.
3. When the document is loaded, power is supplied to the output lines. Confirm that outputs are within the limits below.

Output voltage settings



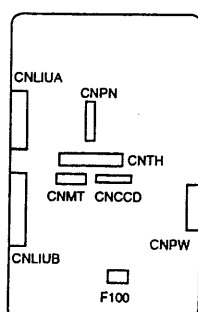
Output	Voltage limits
+12V	11.5V ~ 12.5V
+5V	4.75V ~ 5.25V
VM (+24V)	23.3V ~ 24.7V

Connector No.	CNPW
1	MG
2	MG
3	VM
4	VM
5	DG
6	+5V
7	AG
8	+12V

2. IC protectors replacement

ICPs (IC Protectors) are installed to protect the motor driver circuit and the plunger drive circuit. ICPs protect various ICs and electronic circuits from an overcurrent condition.

The location of ICPs are shown below:



- (1) F100 (ICP-S0.7) is installed in order to protect IC's from an over-current generated in the motor drive circuit. If F100 is open, replace it with a new one.

3. Settings

(1) Dial mode selector

DIAL mode (Soft Switch No. SWB4 DATA No. 3)

(step 1) Select "OPTION SETTING".

KEY: **FUNCTION** ④

DISPLAY: **OPTION SETTING** ↔ **PRESS X OR #**

(step 2) Select "DIAL MODE".

KEY: **# # # # # # #**

DISPLAY: **DIAL MODE** ↔ **1=TONE, 2=PULSE**

Cursor
When initially registering,
the mode shows 1=TONE.
When registering again,
the mode which was registered
formerly is shown.

(step 3) Select, using "1" or "2".

KEY: ①

DISPLAY: **TONE SELECTED**

KEY: ②

DISPLAY: **PULSE SELECTED**

(step 4) End, using the "STOP" key.

KEY: **STOP**

[2] Diagnostics and service soft switch

1. Operating procedure

(1) Entering the diagnostic mode

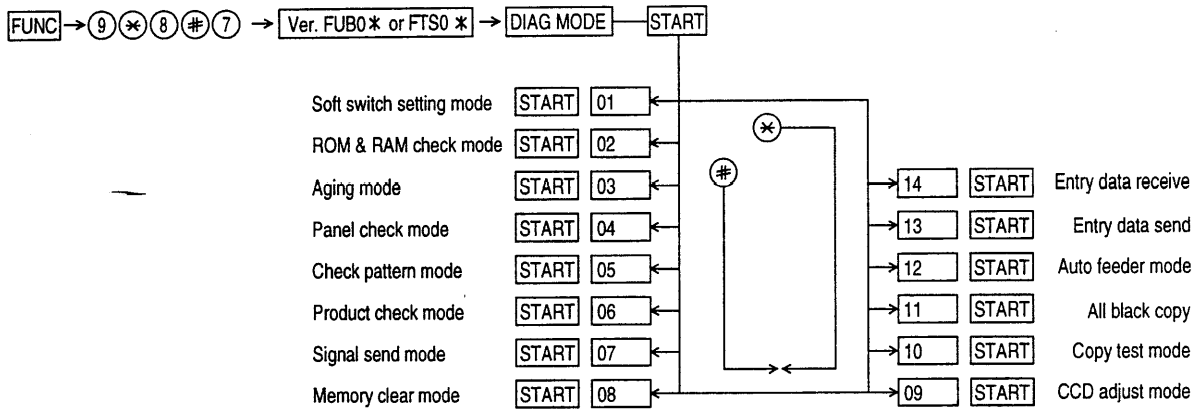
Press **FUNC** → **9** → ***** → **8** → **#** → **7**, and the following display will appear.

ROM Ver. FUB0 *(FTS0 *) After 2 sec: **DIAG MODE**

FUB0 *(355A)
FTS0 *(155A) } Identical

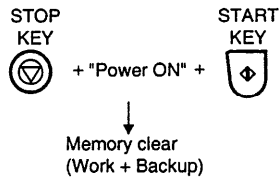
Then press the **START** key and country name selected by country select will appear. Select the desired item with the ***** key or the **#** key or select with the rapid key. Enter the mode with the **START** key.

(Diag-specifications)



If the dial mode cannot be set, repeat the dial mode operation, performing the following operation.

After the power is turned on and "WAIT A MOMENT" is indicated, press the **STOP** key.



"Power ON" keep the **STOP** key pressed while "WAIT A" is indicated. Press the **START** key when "MEMORY CLEAR?" appears.

2. Diagnostic items

ITEM No.	RAPID key	Contents	Function
1	01	Soft switch setting mode	Display soft SW contents, and changes the setting.
2	02	ROM & RAM check mode	Checks program ROM (128KByte) and work RAM (32KByte).
3	03	Aging mode	Prints the check pattern at the speed of 1 sheet/5 minutes.
4	04	Panel check mode	Displays the name of key depressed on the operation panel.
5	05	Check pattern mode	Prints 2 sheets of check pattern.
6	06	Product check mode	Executes No. 4, No. 2 and No. 5 continuously.
7	07	Signal send mode	Sends modem signals sequentially.
8	08	Memory clear mode	Clears the backup memory contents to reset it to the initial state.
9	09	CCD adjust mode	Used for CCD adjustment. Executes copy operation. When the STOP key is pressed, the unit goes into the wait state. When the START key is pressed again, the unit starts operation again.
10	10	Copy test mode	Checks the copy operation.
11	11	All black copy	Performs all-dot printing (2m). (Check thermal head operation)
12	12	Auto feeder mode	Feeds the original documents.
13	13	Entry data send	Sends telephone list, own telephone number list and option set list contents in DTMF signal.
14	14	Entry data receive	Receives telephone list, own telephone number list and option set list contents.

3. Diagnostic items description

3. 1. Soft switch setting mode

Used to change the soft switch settings.

The soft switch which is stored internally is set by using the keys.

The available soft switches are SW-A1 to SW-K1.

The content of soft switches is shown in page 2-5 to 2-13.

The contents are set to factory default settings.

3. 2. ROM & RAM check mode

ROM executes the sum check, and RAM executes the matching test. The result will be notified with the number of short sounds of the buzzer as well as by printing the ROM & RAM check list.

Number of short sounds of buzzer 0 → No error
1 → ROM error
2 → RAM error (32Kbyte)

3. 3. Aging mode

If any document is first present, copying will be executed sheet by sheet. If no document is present, the check pattern will be printed sheet by sheet. This operation will be executed at a rate of one sheet per 5minutes, and will be ended at a total of 10 sheets.

3. 4. Panel check mode

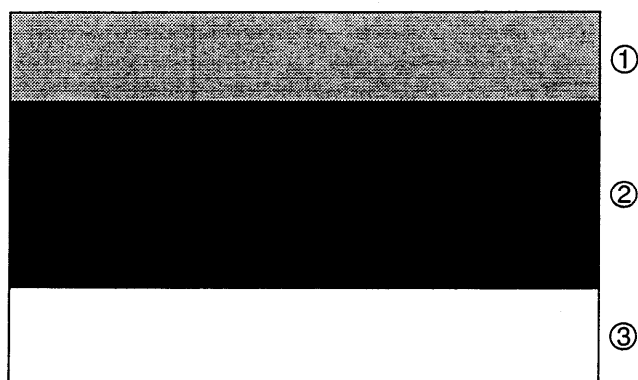
In this mode, whether each key operates properly or not is checked. Press a key on the operation panel, and the corresponding key will be displayed. In this mode, press the STOP key, and the list of the keys pressed in this mode will be printed with the mode ended.

Whether all keys are pressed in this mode or not will be judged when the list is printed, and the result will be printed.

3. 5. Check pattern mode

This mode is used to check the status of print head. Two sheets of check pattern are printed. The following information of check pattern is printed.

- | | |
|--|---------------|
| ① Vertical stripes (alternate white and black lines) | Approx. 35 mm |
| ② Full black | Approx. 70 mm |
| ③ Full white | Approx. 35 mm |



3. 6. Product check mode

This mode is used to perform No. 4 (panel check), No. 2 (ROM & RAM check) and No. 5 (check pattern) continuously.

3. 7. Signal send mode

This mode is used to send various signals to the line.

FAX signals are sent in the level set by the soft switch.

- [1] No signal (CML signal turned on)
- [2] 9600bps
- [3] 7200bps
- [4] 4800bps
- [5] 2400bps
- [6] 300bps (FLAG)
- [7] 2100Hz (CED)
- [8] 1100Hz (CNG)
- [9] END

The signal can be checked by plugging the handset into the TEL line connector on the rear of the machine.

3. 8. Memory clear mode

This mode is used to clear the backup memory and reset to the default settings.

3. 9. CCD adjust mode

This mode is used to adjust the optical system. Since the copy is function performed, set the original. To abort the copy operation, press the STOP key. To restart press the START key. When the copy is completed or when the STOP key is pressed in the interruption state, exit from this mode occurs.

3. 10. Copy test mode

This mode is used to check the copy operation and picture quality.

Before using this mode, set the original. If there is no original, the recording paper is cut.

The first page is copied in condition of FINE/AUTO the second and the subsequent pages are copied in condition of H-TONE/DARK.

3. 11. All back copy

This mode is used to check the print head.

All-dot print is executed unconditionally until 2(m) is obtained except when any trouble occurs (recording paper has run out, recording paper jam, thermal protect).

3. 12. Auto feeder mode

In this mode, a document is inserted and discharged to check the auto feed function.

After this mode is started, set a document, and the document feed will be automatically tested.

3. 13. Entry data send

This mode is used to send the registered data to the remote machine and make the remote machine copy the registered information. When this mode is used for sending, the remote machine must be set to the entry data receive mode (Rapid key 12).

The information to be sent is as follows.

1. Information which can be registered in the "FUNC" + "3" entry mode.
(Excepting data and time)
2. Soft switch data

3. 14. Entry data receive

This mode is used to receive the registered data which is sent from the remote machine and to register the received data in the machine. When this mode is used to receive the information, the remote machine must be set to the entry data send mode (Rapid key 11).

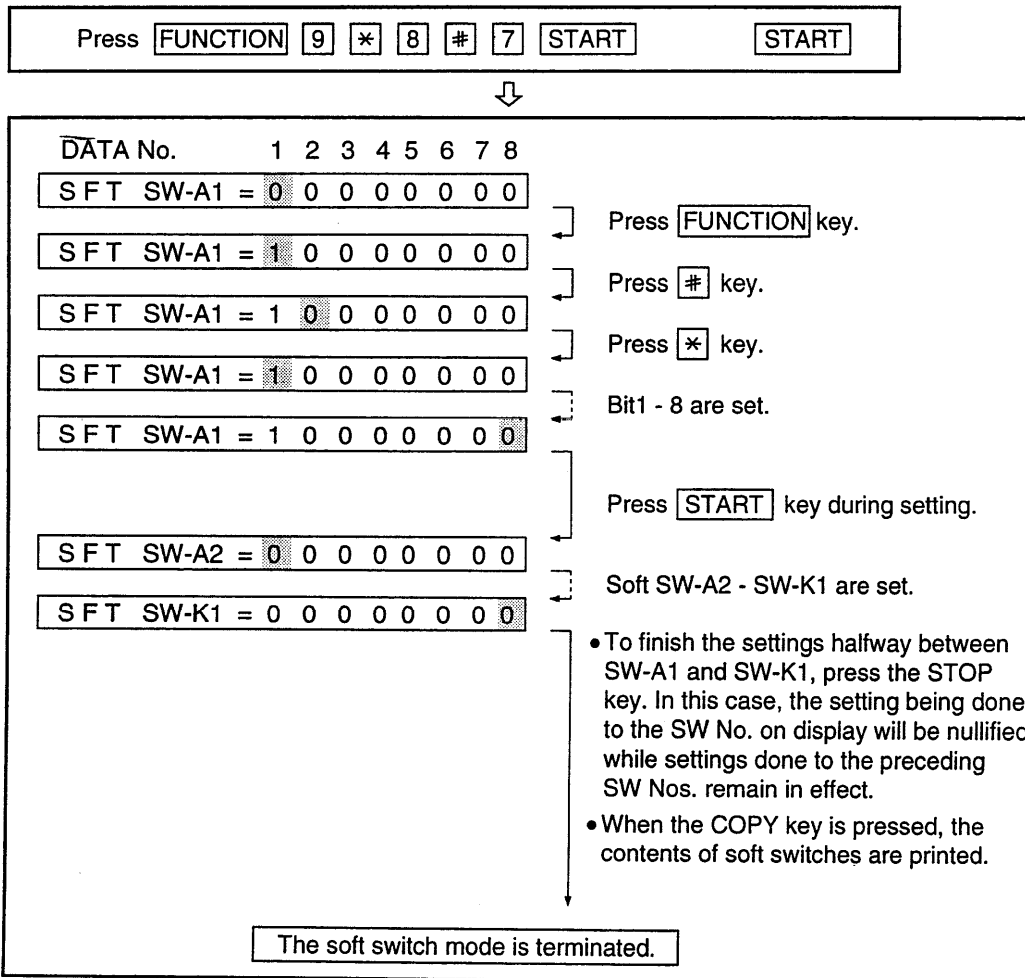
After completion of reception, the telephone number list, own telephone number list, option set list, and soft switch list are printed.

Caution

Unless the time mode is set, the list print is not performed, "NO DATA" appears on the display.

4. How to make soft switch setting

To enter the soft switch mode, make the following key entries in sequence.



5. Soft switch description

• Soft switch

SW NO.	DATA NO.	ITEM	Switch Setting and Function					Initial setting	Remarks	
			1		0					
SW A1	1	Digital line equalization setting	Yes		No			1		
	2	Forced 4800bps reception	Yes		No			0		
	3	Reserved						0		
	4	Modem speed			9600BPS	7200BPS	4800BPS	2400BPS	1	
	5		No. 4	1	1	0	0			
			No. 5	0	1	1	0			
	6	Length limitation of copy/send/receive	No limit			Copy/Send: 1m Receive: 1.5m			0	
	7	CSI transmission	No transmitted			Transmitted			0	
8	DIS receive acknowledgement during G3 transmission	Twice			NSF: Once DIS: Twice			0		
SW A2	1	Non modulated carrier for V29 transmission mode	Yes		No			0		
	2	EOL detect timer	25sec		13sec			0		
	3	Protocol monitor	Yes		No			0		
	4	Line monitor	Yes		No			0		
	5	Signal transmission level	Binary input		8	4	2	1	1	
	6		No. =		1	2	3	4	0	
	7				1	0	1	1	1	1
	8								1	
SW A3	1	Sender's information transmit	No		Yes			0		
	2	H2 mode	No		Yes			0		
	3	Communication error treatment in RTN sending mode (reception)	No communication error			Communication error			0	
	4	CNG transmission	No		Yes			0		
	5	Auto gain control (MODEM)	Enable		Disable			1		
	6	Equalizer freeze control (MODEM)	On		Off			0		
	7	Equalizer freeze control 7200 bps only	No		Yes			0		
	8	Error criterion	10 ~ 20%		5 ~ 10%			0		
SW A4	1	Disconnect the line when DIS is received in RX mode.	No		Yes			1		
	2	Footer Print	Yes		No			0		
	3	End Buzzer	Yes		No			1		
	4	Anti junk fax check	Yes		No			0	OPTION	
	5	CED tone signal interval			75ms	500ms	750ms	1000ms	0	
	6		No. 5	0	0	1	1			
			No. 6	0	1	0	1			
	7	Reserved						0		
8	Reserved						0			
SW B1	1	Recall interval	Binary input		8	4	2	1	1	
	2		No. =		1	2	3	4	0	
	3				1	0	1	0	1	
	4				(10 × 30 sec = 5 min)				0	
	5	Recall times	Binary input		8	4	2	1	0	
	6		No. =		1	2	3	4	0	
	7				0	0	1	0	1	
	8				(Twice)				0	
SW B2	1	Dial pausing(sec/pause)	4sec		2sec			0		
	2	Reserved						0		
	3	Reserved						0		
	4	Reserved						0		
	5	Reserved						0		
	6	Reserved						0		
	7	Reserved						0		
	8	Reserved						0		

SW NO.	DATA NO.	ITEM	Switch Setting and Function				Initial setting	Remarks			
			1		0						
SW I B3	1	Reserved					0				
	2	Reserved					0				
	3	Reserved					0				
	4	Reserved					0				
	5	Reserved					0				
	6	Reserved					0				
	7	Reserved					0				
	8	Reserved					0				
SW I B4	1	Auto dial mode delay timer of before line connect	3 sec		0 sec		1				
	2	Auto dial mode delay timer of after line connect	3.6 sec		3.0 sec		0				
	3	Dial mode	Tone		Pulse		1	OPTION			
	4	Pulse→Tone change function by x key	Enable		Disable		1				
	5	Dial pulse make/break ratio (%)	40/60		33/67		0				
	6	Reserved					0				
	7	Reserved					0				
	8	Reserved					0				
SW I B5	1	DTMF level (low)	Binary input				8	4	2	1	1
	2		No. =				1	2	3	4	0
	3						1	0	0	1 (-9dBm)	0
	4										1
	5	DTMF level (High)	Binary input				8	4	2	1	1
	6		No. =				1	2	3	4	0
	7						1	0	0	0 (-8dBm)	0
	8										0
SW I C1	1	Reading slice (Binary)		Factory Setting	Light	Dark	Darker in Dark				
	2		No. 1	0	1	0	1	0			
			No. 2	0	0	1	1	0			
	3	Reading slice (Half tone)		Factory Setting	Light	Dark	Darker in Dark				
	4		No. 3	0	1	0	1	0			
			No. 4	0	0	1	1	0			
	5	Line density selection	Fine		Standard			0	OPTION		
	6	Reserved					0				
7	Reserved					0					
8	Reserved					0					
SW I D1	1	Number of rings for auto receive	Binary input				8	4	2	1	0
	2		No. =				1	2	3	4	0
	3						0	0	1	0 (2 times)	1
	4										0
	5	Automatic switching manual to auto receive mode	Reception after 4 rings		No reception			0	OPTION		
	6	Reserved					0				
	7	Reserved					0				
	8	Reserved					0				
SW I D2	1	Cl off detection timer	350 ms		700 ms			0			
	2	Reserved					0				
	3	Reserved					0				
	4	Reserved					0				
	5	Distinctive ringing detection	Yes		No			0	OPTION		
	6	Reserved					0				
	7	Reserved					0				
	8	Reserved					0				

SW NO.	DATA NO.	ITEM	Switch Setting and Function				Initial setting	Remarks		
			1		0					
SW I E1	1	Automatic switching mode	Tel/Fax auto switch		Switch to fax		0	OPTION		
	2	Pseudo ringing time at the phone/fax automatic switching mode		15s	30s	60s	120s	0	OPTION	
	3		No. 2	0	1	0	1			
			No. 3	0	0	1	1			
	4	Number of CNG signal detection at the phone/fax automatic switching mode	Twice		Once		1			
	5	CNG detect time at TEL/FAX mode	3s		5s		0			
	6	Reserved					0			
	7	Post answer tone transmit in TEL/FAX mode	No		Yes		0			
8	Reserved					0				
SW I E2	1	Pseudo ringer sound output level to the line		-10dBm	-15dBm	-20dBm	-25dBm	0		
	2		No. 1	0	1	0	1			
			No. 2	0	0	1	1			
	3	Reserved					0			
	4	Reserved					0			
	5	Reserved					0			
	6	Reserved					0			
	7	Reserved					0			
8	Reserved					0				
SW I F1	1	DTMF detection time		50ms	80ms	100ms	120ms	0		
	2		No. 1	0	0	1	1			
			No. 2	0	1	0	1			
	3	Protection of remote reception (5XX) detect	Yes		No		0	OPTION		
	4	Remote reception with GE telephone	Compatible		Not compatible		1			
	5	Remote operation code figures by external tel (0 - 9)	Binary input		8	4	2	1	0	OPTION
	6		No. =		1	2	3	4	1	
	7				0	1	0	1 (5XX)	0	
8							1			
SW I F2	1	CNG detection in STAND-BY mode	Yes		No		0			
	2	Number of CNG detect (AM mode)		1pulse	2pulses	3pulses	4pulses	0		
	3		No. 2	0	0	1	1			
			No. 3	0	1	0	1			
	4	Number of CNG detect (STAND-BY mode)	No. 4	0	0	1	1	0		
	5		No. 5	0	1	0	1	1		
	6	Reserved					0			
	7	Reserved					0			
8	Reserved					0				
SW I G1	1	Quiet detect time	Binary input		8	4	2	1	0	OPTION
	2		No. =		1	2	3	4	1	
	3				0	1	0	0 (4sec)	0	
	4								0	
	5	Quiet detect start timing	Binary input		8	4	2	1	0	
	6		No. =		1	2	3	4	1	
	7				0	1	0	1 (5sec)	0	
	8								1	
SW I G2	1	Reserved					0			
	2	Reserved					0			
	3	Reserved					0			
	4	Reserved					0			
	5	Reserved					0			
	6	Reserved					0			
	7	Reserved					0			
	8	Reserved					0			

SW NO.	DATA NO.	ITEM	Switch Setting and Function					Initial setting	Remarks	
			1		0					
SW I G3	1	Reserved						0		
	2	Reserved						0		
	3	Reserved						0		
	4	TAD connect	Yes		No			0	OPTION	
	5	Section time of quiet detection			30sec	40sec	50sec	60sec	0	
	6		No. 5	0	0	1	1			
			No. 6	0	1	0	1			
	7	Reserved						0		
8	Reserved						0			
SW I H1	1	Busy tone detection ON/OFF time (Lower limit)	350 ms		150 ms			0		
	2	Busy tone detection ON/OFF time (Upper limit)	650 ms		900 ms			0		
	3	Reserved						0		
	4	Busy tone continuous sound detect time	5sec		10 sec			1		
	5	Reserved						0		
	6	Busy tone detect continuation sound detect	No		Yes			0		
	7	Reserved						0		
	8	Busy tone detect intermittent sound detect	No		Yes			0		
SW I H2	1	Busy tone detection pulse number			2pulses	4pulses	6pulses	10pulses	0	
	2		No. 1	0	0	1	1			
			No. 2	0	1	0	1			
	3	Fax switching when A.M. full	Yes		No			0	OPTION	
	4	Reserved						0		
	5	Reserved						0		
	6	Reserved						0		
	7	Reserved						0		
SW I I1	1	Reserved						0		
	2	Reserved						0		
	3	Reserved						0		
	4	Reserved						0		
	5	Reserved						0		
	6	Reserved						0		
	7	Reserved						0		
	8	Reserved						0		
SW I I2	1	Reserved						0		
	2	Reserved						0		
	3	Reserved						0		
	4	Reserved						0		
	5	Reserved						0		
	6	Reserved						0		
	7	Reserved						0		
	8	Reserved						0		
SW I I3	1	Reserved						0		
	2	Reserved						0		
	3	Reserved						0		
	4	Reserved						0		
	5	Reserved						0		
	6	Reserved						0		
	7	Reserved						0		
	8	Reserved						0		

SW NO.	DATA NO.	ITEM	Switch Setting and Function					Initial setting	Remarks
			1		0				
SW J1	1	Transaction report (Communication result report)		Error only	Send only	Always	No print	0	OPTION
	2		No. 1	0	0	1	1		
			No. 2	0	1	0	1		
	3	Sender's phone number setting	Cannot change			Change allowed		0	
	4	Reserved						0	
	5	Reserved						0	
	6	Reserved						0	
	7	Ringer volume		Off	Low	Middle	High	1	OPTION
8	No. 7		0	0	1	1			
	No. 8		0	1	0	1			
SW J2	1	Speaker volume		Low	Low	Middle	High	1	OPTION
	2		No. 1	0	0	1	1		
			No. 2	0	1	0	1		
	3	Polling function (FO-355A only)	Yes			No		0	OPTION
	4	Reserved						0	
	5	Reserved						0	
	6	Reserved						0	
	7	Reserved						0	
8	Reserved						0		
SW K1	1	Entering diag mode by pressing SPEED key	Yes			No		0	
	2	Reserved						0	
	3	Reserved						0	
	4	Reserved						0	
	5	Reserved						0	
	6	Reserved						0	
	7	Reserved						0	
	8	Reserved						0	

• **Soft switch function description**

SW-A1 No. 1 Digital line equalization setting

Line equalization is to be set according to the line characteristics.

Setting should be made according to distance between the telephone and the telephone company central switching station.

SW-A1 No. 2 Forced 4800 BPS reception

When line conditions warrant that receptions take place at 4800 BPS repeatedly. It may improve the success of receptions by setting at 4800 BPS. This improve the receiving document quality and reduces handshake time due to fallback during training.

SW-A1 No. 3 Reserved

Set to "0".

SW-A1 No. 4, No. 5 Modem speed

Used to set determine the initial modem speed. The default is 9600BPS.

It may be necessary to program it to a slower speed when frequent line fallback is encountered, in order to save the time required for fallback procedure.

SW-A1 No. 6 Maximum copy, transmit, receive page length

Used to set the maximum page length.

To avoid possible paper jam, the page length is normally limited to 1 meter for copy or transmit, and 1.5 meters for receive.

It is possible to set it to "No limit" to transmit a ling document, such as a computer print form, etc. (In this case, the receiver must also be set to no limit.)

SW-A1 No. 7 CSI transmission

(CSI TRANSMISSION) is a switch to set whether the machine sends or does not send the signal (CSI signal) informing its own telephone No. to the remote fax. Machine when information is received. When "nonsending" is set, the telephone No. is not output on the remote transmitting machine if the remote transmitting machine has the function to display or print the telephone No. of receiving machine, using this CSI signal.

SW-A1 No. 8 DIS receive acknowledgment during G3 transmission

Used to make a choice of whether reception of DIS(NSF) is acknowledged after receiving two DIS(NSFs) or receiving one DIS (two NSF).

It may be useful for overseas communication to avoid an echo suppression problem, if set to 1.

SW-A2 No. 1 Non-modulated carrier detection for V29 modem

Though transmission of a non-modulated carrier is not required for transmission by the V29 modem according to the CCITT.

Recommendation, it may be permitted to a send non-modulated carrier before the image signal to avoid and echo suppression problem.

It may be useful for overseas communication to avoid an echo suppression problem, if set to 1.

SW-A2 No. 2 EOL (End Of Line) detect timer

Used to make a choice of whether to use the 25-second or 13-second timer for detection of EOL.

This is effective to override communication failures with some facsimile models that have longer EOL detection.

SW-A2 No. 3 Protocol monitor

Normally set to "0". If set to "1", communication can be checked, in case of troubles, without using a G3 tester or other tools.

When communication FSK data transmission or reception is made, the data is taken into the buffer. When communication is finished, the data is analyzed and printed out. When data is received with the line monitor (SW-A2 No.4) set to "1" the reception level is also printed out.

SW-A2 No. 4 Line monitor

Normally set to "0". If set to "1", the transmission speed and the reception level are displayed on the LCD. Used for line tests.

SW-A2 No. 5 ~ No. 8 Signal transmission level

Used to control the signal transmission level in the range of -1dB to -15dB.

The factory setting is at -10dB(MODEM output).

SW-A3 No. 1 Sender's information transmit

(SENDER'S INFORMATION TRANSMISSION) is a switch to set the function to print the content of HEADER PRINT described in the passcode list at the front end of receiver's original when original is sent to the remote machine.

If this switch is set to "NO", the HEADER PRINT is not output at the receiving machine.

SW-A3 No. 2 H2 mode (SHARP special mode)

Used to determine reception of H2 mode (15 sec transmission mode). When set to OFF, H2 mode reception is inhibited even though the transmitting machine has H2 mode function.

SW-A3 No. 3 Communication error treatment (reception) in RTN sending

Used to determine communication error treatment when RTN is sent by occurrence of a received image error in G3 reception. When it is set to "1", communication error is judged as no error.

SW-A3 No. 4 CNG transmission

When set to "0", this model allows CNG transmission by pressing the Start key in the key pad dialing mode. When set to "1", CNG transmission in the key pad dialing mode cannot be performed. In either case, CNG transmission can be performed in the auto dial mode.

SW-A3 No. 5 Auto gain control(MODEM)

When this mode is enabled, if the reception signal level is under 31dBm. The modem itself controls the signal gain automatically.

SW-A3 No. 6 Equalization freeze control

This switch is used to perform reception operation by fixing the equalizer control of modem for the line which is always in unfavorable state and picture cannot be received.

× Usually, the control is executed according to the state of line where the equalizer setting is changed always.

SW-A3 No. 7 Equalization freeze 7200BPS only

Setting which specifies SW-A3 No.6 control only in condition of 7200BPS modem speed.

SW-A3 No. 8 Error criterion

Used to select error criterion for sending back RTN when receiving image data.

SW-A4 No. 1 Disconnect the line when DIS is received in RX mode

Bit1=0: When DIS signal is received during RX mode, disconnect the line immediately.

Bit1=1: When DIS signal is received during RX mode, wait the next signal.

SW-A4 No. 2 Footer print

When set to "1", the date of reception, the sender machine No., and the page No. are automatically recorded at the end of reception.

SW-A4 No. 3 End buzzer

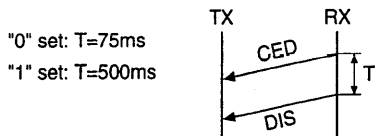
Setting this bit to 0 will disable the end buzzer (including the error buzzer /on-hook buzzer).

SW-A4 No. 4 Anti junk fax check

When use the Anti junk fax function, set to "1".

SW-A4 No. 5, No. 6 CED tone signal interval

For international communication, the 2100Hz CED tone may act as an echo suppression switch, causing a communication problem. Though this soft switch is normally set to "0", it should be set to "1" so as to change the timer between the CED tone and DIS signal from 75ms to 500ms to eliminate the communication problem caused by echo.



SW-A4 No. 7, No. 8 Reserved

Set to "0".

SW-B1 No. 1 ~ No. 4 Recall interval

Choice is made for a redial interval for speed and rapid dial calls. Used a binary number to program this. If set to "0" accidentally, 1 will be assumed. If a number above 5 was entered, it will be set to "5". In this case, it has to be corrected.

SW-B1 No. 5 ~ No. 8 Recall times

Choice is made as to how many redials should be, ade. Use a binary number to program it. If set to "0" or "1" by accident, the redial number will be set to "2". If a number above 9 was entered, it will be set to "9".

SW-B2 No. 1 Dialing pause

Pauses can be inserted between telephone numbers of direct dial connection. Selection of 4 sec or 2 sec pause is available.

SW-B2 No. 2 ~ No. 8 Reserved

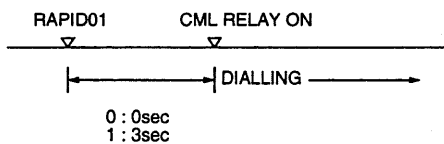
Set to "0".

SW-B3 No. 1 ~ No. 8 Reserved

Set to "0".

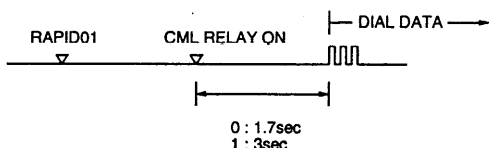
SW-B4 No. 1 Auto dial mode Delay timer of before line connect.

Delay time between the dial key input and line connection under the auto dial mode.



SW-B4 No. 2 Auto dial mode Delay timer of after line connect.

Delay time between the line connection and dial data output under the auto dial mode.



SW-B4 No. 3 Dial mode

When using the pulse dial, set to "1". When using the tone dial, set to "0".

SW-B4 No. 4 × key Pulse dial → Tone dial

When setting to 1, the mode is changed by pressing the × key from the pulse dial mode to the tone dial mode.

SW-B4 No. 5 Dial pulse make/break ratio (%)

When using the 33% make ratio pulse dial, set to 0. When using the 40% make ratio pulse dial, set to 1.

SW-B4 No. 6 ~ No. 8 Reserved

Set to "0".

SW-C1 No. 1, No. 2 Reading slice(binary)

Used to determine the set value of reading density in standard/fine mode. The standard setting is "00"(Factory setting is "00")

SW-C1 No. 3, No. 4 Reading slice(half tone)

Used to determine the set value of reading density in half tone mode. The standard setting is "00"(Factory setting is "00")

SW-C1 No. 5 Line density selection

Used to set the transmission mode which is automatically selected when the Resolution key is not pressed. In the copy mode, however, the fine mode is automatically selected unless the Resolution key is manually set to another mode.

SW-C1 No. 6 ~ No. 8 Reserved

Set to "0".

SW-D1 No. 1 ~ No. 4 Number of rings for auto answer mode

When the machine is set in the auto receive mode, the number of rings before answering can be selected. It may be set from one to four rings using a binary number. Since the facsimile telephone could be used as an ordinary telephone if the handset is taken off the hook, it should be programmed to the user's choice. If the soft switch was set to "1", direct connection is made to the facsimile. If a facsimile calling beep was heard when the handset is taken off the hook, press the START key and put the handset on the hook to have the facsimile start receiving. If it was set to "0" accidentally, receive ring is set to "1". If it was above 6, receive rings are set to "6".

NOTE: If the machine is set to answer after a large number of rings, it may not be able to receive faxes successfully. If you have difficulty receiving faxes, reduce the number of rings to a maximum of 6.

SW-D1 No. 5 Automatic switching from manual to auto receive mode

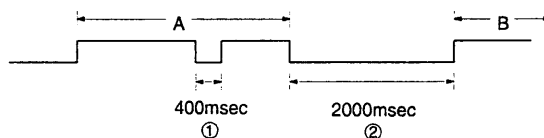
This soft switch is used to select whether the machine should switch to the auto receive mode after 5 rings in the manual receive mode or remain in the same way as SW-D1 No. 1, No. 2, No. 3 and No. 4 "0"1"0"1"(5 rings).

SW-D1 No. 6 ~ No. 8 Reserved

Set to "0".

SW-D2 No. 1 CI off detection timer

Set the minimum time period of CI signal interruption which affords to be judged as a CI OFF section.



SW-D2 No. 1 = 0:750 msec (CI interruption > 750 msec: Judged as a CI OFF section)

The section 1 is not judged as a CI OFF section, the CI signal A is counted as one signal. The section 2 is judged as a CI OFF section, the CI signal B is considered as the second signal.

SW-D2 No. 1 = 1:350 msec (CI interruption > 350 msec: Judged as a CI OFF section)

The section 1 is judged as a CI OFF section, and the CI signal A is counted as two signals.

The section 2 is judged as a CI OFF section, and the CI signal B is considered as the third signal.

SW-D2 No. 2 ~ No. 4 Reserved

Set to "0".

SW-D2 No. 5 Distinctive ringing detection

When set to "1", machine recognize the CI signal FAX ringing or TEL ringing automatically.

SW-E1 No. 1 Automatic switching mode

Used to set auto TEL/FAX switching mode or to set the normal fax mode.

SW-E1 No. 2, No. 3 Pseudo ringing time at the phone/fax automatic switching mode

Choice is made as to how long to rumble the dummy ringer on TEL/FAX automatic switching mode.

SW-E1 No. 4 Number of CNG signal detection at the phone/fax automatic switching mode

Used for detection of CNG in one tone or two tones in the TEL/FAX automatic switching mode.

SW-E1 No. 5 CNG detect time at TEL/FAX mode

The number of times at which CNG signal is detected is set during receiving in the TEL/FAX automatic switch setting mode.

- 0: 1 time
- 1: 2 times

SW-E1 No. 6 Reserved

Set to "0".

SW-E1 No. 7 Post answer tone transmit in TEL/FAX mode

When set to "0", machine send the 3 tones (880Hz/988Hz/1046Hz) in TEL/FAX auto changeover mode.

SW-E1 No. 8 Reserved

Set to "0".

SW-E2 No. 1, No. 2 Pseudo ringer sound output level to the line

Used to adjust sound volume of pseudo ringer to the line (ring back tone) generated on selecting TEL/FAX.

SW-E2 No. 3 ~ No. 8 Reserved

Set to "0".

SW-F1 No. 1, No. 2 DTMF detect time

Used to set detect time of DTMF (Dual Tone Multi Frequency) used in remote reception(5 * *).

The longer the detect time is, the less the error detections are caused by noises.

SW-F1 No. 3 Remote reception (5 * *)detect

Used to set the function of remote reception (5 * *). When set to "1", the remote reception function is disabled.

SW-F1 No. 4 Remote reception

(Corresponding to TEL made by GE) P.B.X.

- "1": Compatible with TEL mode by GE
- "0": Not compatible

- When sending (5 * *) for remote reception with a GE manufactured telephone remote reception may not take place because of special specifications in their DTMF. To overcome this, a soft SW is provided to change the modem setting to allow for remote reception.
- If this soft SW is set to "1", other telephone sets may be adversely affected.

SW-F1 No. 5 ~ No. 8 Remote operation code figures by external TEL

Remote operation codes can be changes from 0 through 9. If set to greater than 9, it defaults to 9. The "5 * * " is not changed.

Ex-7 * * (Default: 5 * *)

SW-F2 No. 1 CNG signal detection in standby condition

When setting to "1", the CNG signal detection function during standby stops.

SW-F2 No. 2, No. 3 Number of CNG signal detection(AM)

Used for detection of CNG in 1 to 4 pulses.

SW-F2 No. 4, No. 5 Number of CNG signal detection(STAND-BY mode)

Used for detection of CNG in 1 to 4 pulses.

SW-F2 No. 6 ~ No. 8 Reserved

Set to "0".

SW-G1 No. 1 ~ No. 3 Quiet detect time (Used in answering machine mode)

When an answering machine is connected, if a no sound state is detected for a certain period of time, the machine judges it as a transmission from a facsimile machine and automatically switches to the FAX mode.

SW-G1 No. 5 ~ No. 8 Quiet detect start timing (Used in answering machine mode)

Inserts a pause before commencing quiet detection.

SW-G2 No. 1 ~ No. 8 Reserved

Set to "0".

SW-G3 No. 1 ~ No. 3 Reserved

Set to "0".

SW-G3 No. 4 TAD connected

When connecting the answering machine to the extension telephone jack, set to "1".

SW-G3 No. 5 ~ No. 6 Section time of quiet detection.

The switch which sets the time from the start of detection function to the end of the function.

SW-G3 No. 7 ~ No. 8 Reserved

Set to "0".

SW-H1 No. 1 Busy tone detection ON/OFF time (Lower limit).

The initial value of detection is set according to electric condition. The set value is changed according to the local switch board. (Erroneous detection of sound is reduced.)

Normally the upper limit is set to 750 msec, and the lower limit to 200 msec. If erroneous detection is caused by sound, etc, adjust the detection range. The lower limit can be set in the range of 350 msec to 200 msec.

SW-H1 No. 2 Busy tone detection ON/OFF time (Upper limit).

Similarly to SW-H1 No. 1, the set value can be varied. The upper limit can be set in the range of 650 msec to 750 msec.

SW-H1 No. 1	SW-H1 No. 2	Detection range
0	0	150 msec - 900 msec
0	1	150 msec - 650 msec
1	0	350 msec - 900 msec
1	1	350 msec - 650 msec

SW-H1 No. 3 Reserved

Set to "0".

SW-H1 No. 4 Busy tone continuous sound detect time

Set detecting time of busy tone for 5 seconds or as is PTT.

SW-H1 No. 5 Reserved

Set to "0".

SW-H1 No. 6 Busy tone detect continuation sound detect

Used to select detection of the continuous sound of a certain frequency.

SW-H1 No. 7 Reserved

Set to "0".

SW-H1 No. 8 Busy tone detect intermittent sound detect

Line off detection YES/NO is set.

SW-H2 No. 1, No. 2 Number of Busy tone pulses

Used to set detection of Busy tone intermittent sounds.

SW-H2 No. 3 Fax switching when A. M. full

Used to disable or enable the function of OFF-HOOK hold.

If the answering machine's memory (tape) is full and there is no response, the machine automatically switches to Fax reception.

The OFF-HOOK hold time (Answering machine operating time) is set by normal operation.

SW-H2 No. 4 ~ No. 8 Reserved

Set to "0".

SW-I1 No. 1 ~ No. 8 Reserved

Set to "0".

SW-I2 No. 1 ~ No. 8 Reserved

Set to "0".

SW-I3 No. 1 ~ No. 8 Reserved

Set to "0".

SW-J1 No. 1, No. 2 Transaction report (Communication result printout)

It is possible to obtain transaction results after each communication.

Normally, the switch is set (No. 1:0, No. 2:0) so that the transaction report is produced only when a communication error is encountered.

If No. 1 was set to 1 and No. 2 to 0, the transaction report will be produced every time a communication is done, even if the communication was successful.

Setting No. 1 to 1 and No. 2 to 1 will disable this function. No transaction report printed.

SW-J1 No. 3 Sender's phone number registration

Used to make a choice of whether the registered sender's phone number can be changed or not. If the switch is set to "1", new registration of the sender's phone number is disabled to prevent accidental wrong input.

SW-J1 No. 4 ~ No. 6 Reserved

Set to "0".

SW-J1 No. 7, No. 8 Ringer Volume

Used to adjust ringing volume.

SW-J2 No. 1, No. 2 Seaker Volume

Used to adjust sound volume from a speaker.

SW-J2 No. 3 Polling function (FO-355A only)

Polling function YES/NO is set.

SW-J2 No. 4 ~ No. 8 Reserved

Set to "0".

SW-K1 No. 1 Entering DIAG mode by pressing SPEED key

A bit which is used in the production process only. When the SPEED key is pressed, the switch is changed from the stand-by state to the DIAG mode.

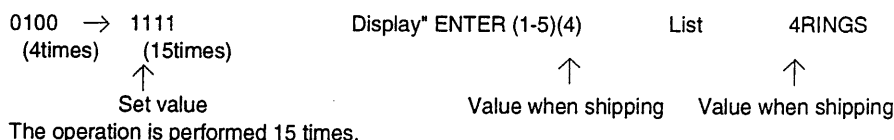
SW-K1 No. 2 ~ No. 8 Reserved

Set to "0".

Caution

When the value which the user is not allowed to set using the soft SW is set, output to the indication or list is not performed. However, the actual operation is performed at the set value.

(Example) Number of rings for auto receive SWD1 No. 1-No. 4



[3] Troubleshooting

Refer to the following actions to troubleshoot any of problems mentioned in 1-4.

- [1] A communication error occurs.
- [2] Image distortion produced.
- [3] Unable to do overseas communication.
- [4] Communication speed slow due to FALLBACK.
 - Increase the transmission level SOFT SWITCH A2-5, 6, 7, 8. May be used in case [1] [2] [3].
 - Decrease the transmission level SOFT SWITCH A2-5, 6, 7, 8. May be used in case [3].

- Apply line equalization SOFT SWITCH A1-1. May be used in case [1] [2] [3] [4].
- Slow down the transmission speed SOFT SWITCH A1-4, 5. May be used in case [2] [3].
- Replace the TEL/LIU PWB. May be used in all cases.
- Replace the control PWB. May be used in all cases.

* If transmission problems still exist on the machine, use the following format and check the related matters.

TO: _____ ATT: _____ Ref.No. : _____
 CC: _____ ATT: _____ Date : _____
 FM: _____ Dept : _____
 _____ Sign : _____

***** Facsimile communication problem *****		Ref.No.:																					
From: Mr.	Fax Tel No.:	Date:																					
Our customer	Name	Tel No.																					
	Address	Fax No.																					
	Contact person	Model name																					
Other party	Name	Tel No.																					
	Address	Fax No.																					
	Contact person	Model name																					
Problem mode	Line: Domestic / international	Model: G3																					
	Reception / Transmission	Automatic reception / Manual reception																					
		Automatic dialing / Manual dialing / Others																					
Frequency:	%	ROM version:																					
Confirmation item			Please mark problem with an X. No problem is: 0.																				
			<table border="1" style="width: 100%; text-align: center;"> <tr> <th>A1</th><th>A2</th><th>B1</th><th>B2</th><th>C1</th><th>C2</th><th>D1</th><th>D2</th><th>E1</th><th>E2</th> </tr> <tr> <td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td> </tr> </table>	A1	A2	B1	B2	C1	C2	D1	D2	E1	E2										
			A1	A2	B1	B2	C1	C2	D1	D2	E1	E2											
Transmission level setting is () dB at our customer																							
Transmission level () dBm Reception level () dBm By level meter at B1 and B2																							
Comment																							
Countermeasure																							
**** Please attach the G3 data and activity report on problem. ****																							

* Please complete this report before calling the "TAC" hotline if problem still occurs.

[4] Error code table**G3 Transmission**

Code	Final received signal	Error Condition (Receiver side)
0	Incomplete signal frame	Cannot recognize bit stream after flag
1	NSF, DIS	Cannot recognize DCS signal Cannot recognize NSS signal
2	CFR	Disconnects line during reception
3	FTT	Disconnects line by fallback
4	MCF	Disconnects line during reception of multi-page Cannot recognize NSS, DCS signal in the case of mode change
5	PIP or PIN	No response in receiver side to picture signal after no response in transmitter side to receive TALK mode request
6	RTN or RTP	Cannot recognize NSS, DCS signal after transmitting RTN or RTP signal.
7	No signal or DCN	No response in receiver side or DCN signal received*

G3 Reception

Code	Final received signal	Error Condition (Transmitter side)
0	Incomplete signal frame	Cannot recognize bit stream after flag
1	NSS, DCS	Cannot recognize CFR or FTT signal Disconnects line during transmission
2	NSC, DTC	Cannot recognize NSS signal
3	EOP	Cannot recognize MCF, PIP, PIN, RTN, RTP signal
4	EOM	Cannot recognize MCF, PIP, PIN, RTN, RTP signal in the case of mode change
5	MPS	Cannot recognize MCF, PIP, PIN, RTN, RTP signal in the case of multi-page
6	PR1-Q	Cannot recognize PIP, PIN signal in the case of TALK request
7	No signal or DCN	No response in transmitter (cannot recognize DIS signal) or DCN signal received*

CHAPTER 3. MECHANISM BLOCKS

[1] General description

1. Document feed block and diagram

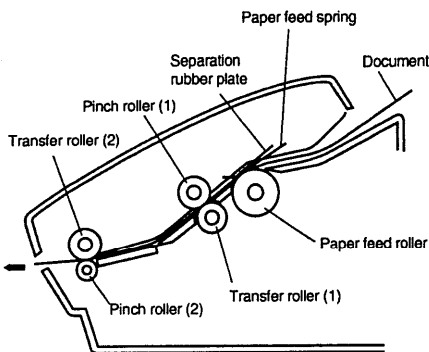


Fig. 1

2. Document feed operation

- 1) The document placed in the hopper actuates the document sensor. After one second, the pulse motor starts to drive the paper feed roller. The document is automatically taken up into the machine, and stopped at the document sensor.
- 2) When a specified number of pulses are received from the document sensor after the document lead edge is sensed, scanning is started.
- 3) When a specified number of pulses are received from the document sensor after the document rear edge is sensed, scanning is terminated and the document is fed through.
- 4) If the document sensor is active (i.e., another document is in the hopper), when the preceding document scanning is completed and it is fed out, the next document is taken up into the machine. If the document sensor is not active (i.e., there is no document in the hopper), when the document is fed out, the operation is terminated.

3. Hopper mechanism

3-1. General view

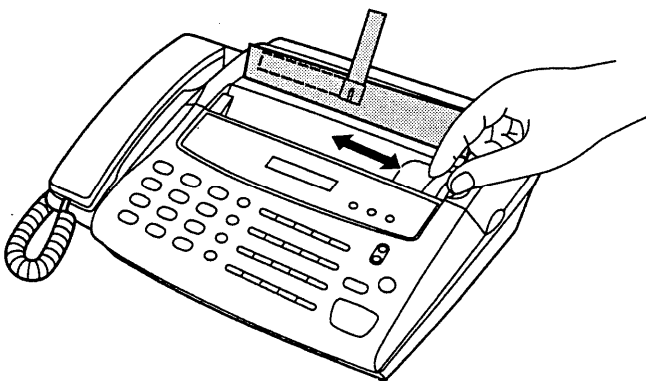


Fig. 2

The hopper is used to align documents with the document guides adjusted to the paper width.

NOTE: Adjust the document guides before and after inserting the document.

3-2. Automatic document feed

- 1) Use of the paper feed roller and separation rubber plate ensures error-free transport and separation of documents. The plate spring presses the document to the paper feed roller to assure smooth feeding of the document.
- 2) Document separation method: Separation rubber plate

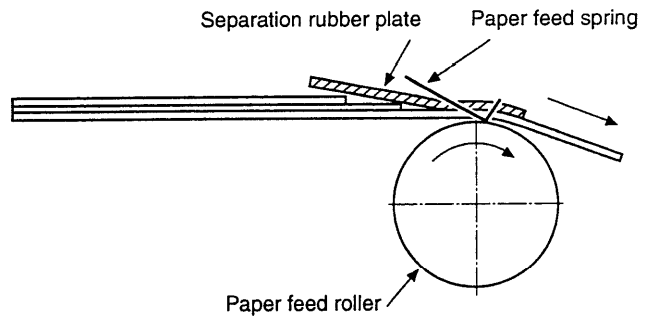


Fig. 3

3-3. Documents applicable for automatic feed

	4x6 series (788mm x 1091mm x 1000mm sheets)		Square meter series	
	Minimum	Maximum	Minimum	Maximum
Feeder capacity	20 sheets, max.			
Paper weight	45kg	64.3kg	52g/m ²	74.3g/m ²
Paper thickness (ref.)	0.06mm	0.09mm	0.06mm	0.09mm
Paper size	B6 (128mm x 182mm) – A4 (210mm x 297mm), Letter (216mm x 279mm)			
Feeder capacity	10 sheets, max.			
Paper weight	45kg	90kg	52g/m ²	104g/m ²
Paper thickness (ref.)	0.06mm	0.12mm	0.06mm	0.12mm
Paper size	B6 (128mm x 182mm) – A4 (210mm x 297mm), Letter (216mm x 279mm)			
Paper quality	High quality paper or equivalent			

NOTE: Double-side coated documents and documents on facsimile recording paper should be inserted manually. The document feed quantity may be changed according to the document thickness.

Documents corresponding to a paper weight heavier than 64.3kg (74.3g/m²) and lighter than 135kg (157g/m²) are acceptable for manual feed.

Documents heavier than 135kg in terms of the paper weight must be duplicated on a copier to make it operative in the facsimile.

3-4. Loading the documents

- 1) Make sure that the documents are of suitable size and thickness, and free from creases, folds, curls, wet glue, wet ink, clips, staples and pins.
- 2) Place documents face down in the hopper.
 - i) Adjust the document guides to the document size.
 - ii) Align the top edge of documents and gently place them into the hopper. The first page under the stack will be taken up by the feed roller to get ready for transmission.

NOTES: 1) Curled edge of documents, if any, must be straighten out.

2) Do not load the documents of different sizes and/or thicknesses together.

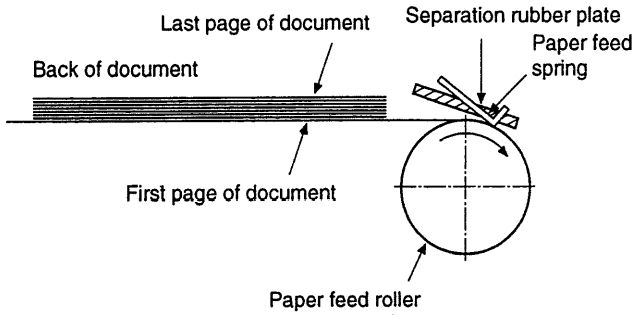


Fig. 4

3-5. Documents requiring use of document carrier

- 1) Documents smaller than B6 (128mm x 182mm).
- 2) Documents thinner than the thickness of 0.06mm.
- 3) Documents containing creases, folds, or curls, especially those whose surface is curled (maximum allowable curl is 5mm).
- 4) Documents containing tears.
- 5) Carbon-backed documents. (Insert a white sheet of paper between the carbon back and the document carrier to avoid transfer of carbon to the carrier.)
- 6) Documents containing an easily separable writing material (e.g., those written with a lead pencil).
- 7) Transparent documents.
- 8) Folded or glued documents.

Document in document carrier should be inserted manually into the feeder.

4. Document release

4-1. Cross section view

(RIGHT SIDE)

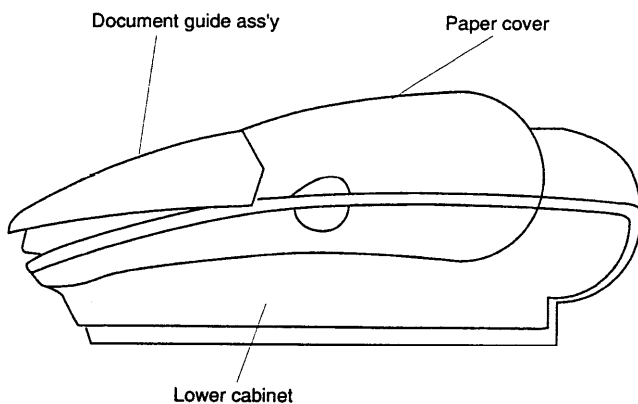


Fig. 5

4-2. General

When the release lever is pulled by hand in the direction of arrow A, the latch is released and the upper document guide moves on its axis in the direction of the arrow. The feed rollers, the separation rubber plate, and the pinch rollers become free to make it possible to remove the document.

5. Optical system

(1) General view

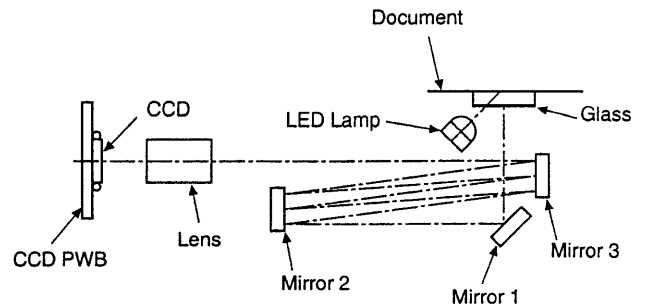


Fig. 6

(2) Composition

The optical system is composed of the document feed mechanism, the lamp, the reflecting mirrors, the focusing lens, the CCD sensor, and the read process circuit.

5-1. LED Lamp

The LED lamp is used to expose the document.

5-2. Lens

The lens is used to focus the light reflected from the document on the CCD elements.

5-3. CCD

The CCD (charge coupled device) image sensor consists of a photodiode array which converts the intensity of light reflected from the document surface into series of analog voltages which are then stored in an analog shift register. The series of analog voltages are then converted into a digital equivalent by a black/white binary logic circuit.

(Example) Scan signal output waveform

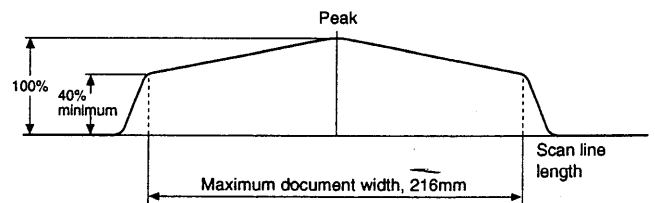


Fig. 7

- 1) The minimum output from the CCD at the maximum scan width of document (216mm) must be more than 40% of the peak value.
- 2) The peak output must be about 200mV under room temperature to avoid CCD saturation.

6. Recording block

(1) General view

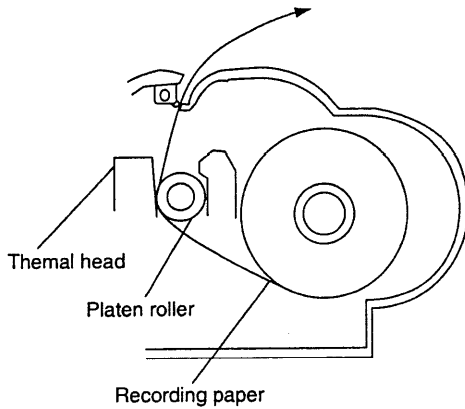


Fig. 8

6-1. Driving

Via the pulse motor gear shaft, the reduction gear, and the recording paper feed gear, rotation of the pulse motor is conveyed to the recording paper feed roller to feed the recording paper.

6-2. Recording

Use of a thermal head permits easier maintenance and low operating costs.

1) Thermal head

The thermal head consists of 1728-dot heat elements arranged in a single row and has the resolution of 8 dots/mm. The maximum recording speed is 10ms/line. The thermal head also incorporates a 1728-dot shift register latch and an output control driver circuit. Low power consumption is achieved by dividing the head into nine segments.

2) Structure of the recording mechanism

Recording is accomplished by pressing the thermal head on the recording paper against the platen roller.

The main scan (horizontal) is electronically achieved, while the sub-scan (vertical) is achieved by moving the recording paper by the recording platen roller.

Usually, the cause for uneven print tone is caused by misalignment of the thermal head or uneven contact with the roller.

It can be checked in the following manner.

- 1) Check if the thermal head power and signal cables are properly routed.
- 2) Check that the thermal head pivot moves smoothly up and down.
- 3) Check that the thermal head support bracket is secured without any play.
- 4) Check to see that the recording platen roller has proper concentricity, in the case of a print tone variation evenly repeated down the page.
- 5) Replace the thermal head with a new one and check to see if the same trouble occurs.

[2] Disassembly and assembly procedures

- This chapter mainly describes the disassembly procedures. For the assembly procedures, reverse the disassembly procedures.
- Easy and simple disassembly/assembly procedures of some parts and units are omitted. For disassembly and assembly of such parts and units, refer to the Parts List.
- The numbers in the illustration, the parts list and the flowchart in a same section are common to each other.
- To assure reliability of the product, the disassembly and the assembly procedures should be performed carefully and deliberately.

1	Recording paper cover unit	
----------	-----------------------------------	--

a. Remove the recording paper cover unit, the mechanism unit according to the flowchart.

b. Disassembly the recording paper cover unit, according to the flowchart.

Parts list (Fig. 1)

No.	Part name	Q'ty
1	Mechanism unit	1
2	Recording paper cover unit	1
3	Screw (3×10)	3
4	Recording paper cover compart unit	1
5	Paper sensor lever	1
6	Screw (3×10)	2
7	Paper guide	1
8	Platen gear	1
9	Platen bearing	2
10	Platen roller	1
11	Hopper guide	1
12	Hopper spring	1
13	Recording paper cover A	1
14	Screw (3×10)	1
15	Panel stopper	1

Fig. 1

2 Head frame unit

- a. Remove the recording paper cover unit, the mechanism unit according to procedure 1-a.
- b. Remove the head frame unit from the mechanism unit according to the flowchart.
- c. Disassemble the head frame unit according to the flowchart.

Parts list (Fig. 2)

No.	Part name	Q'ty
1	Mechanism unit	1
2	Screw (3×12)	2
3	Connector	1
4	Screw(3×6)	1
5	Head frame unit	1
6	AC cord	1
7	Screw	1
8	Connector	1

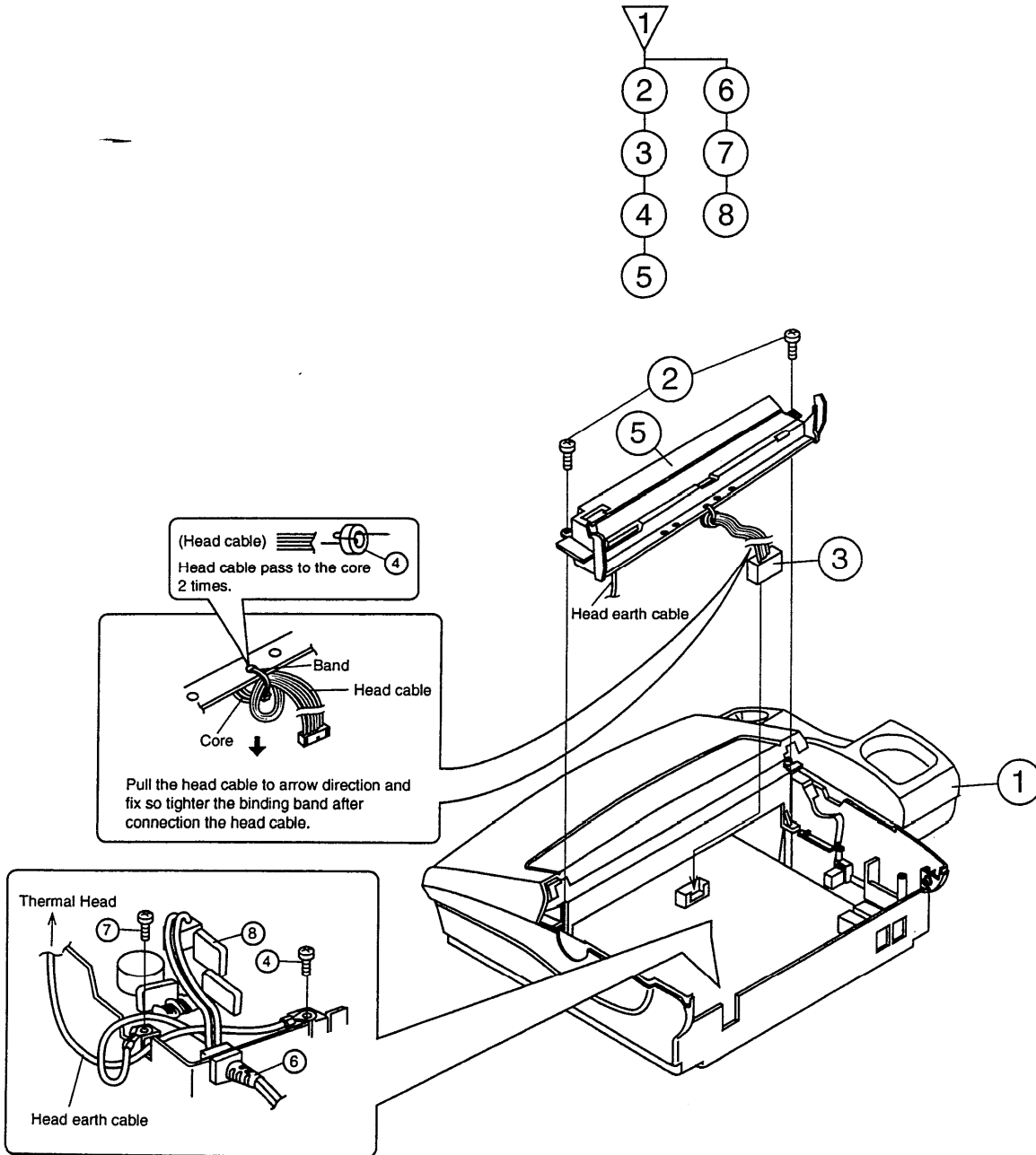


Fig. 2

3 Thermal head unit

- a. Remove the recording paper cover unit, the mechanism unit according to procedure 1-a.
- b. Remove the head frame unit from the mechanism unit according to procedure 2-b.
- c. Remove the thermal head to the flowchart.

Parts list (Fig. 3)

No.	Part name	Qty
1	Thermal head unit	1
2	Head spring	5
3	Head frame	1
4	Screw	2
5	Head earth cable	1
6	Head guide (R)	1
7	Head guide (L)	1
8	Head cable	1
9	Thermal head	1

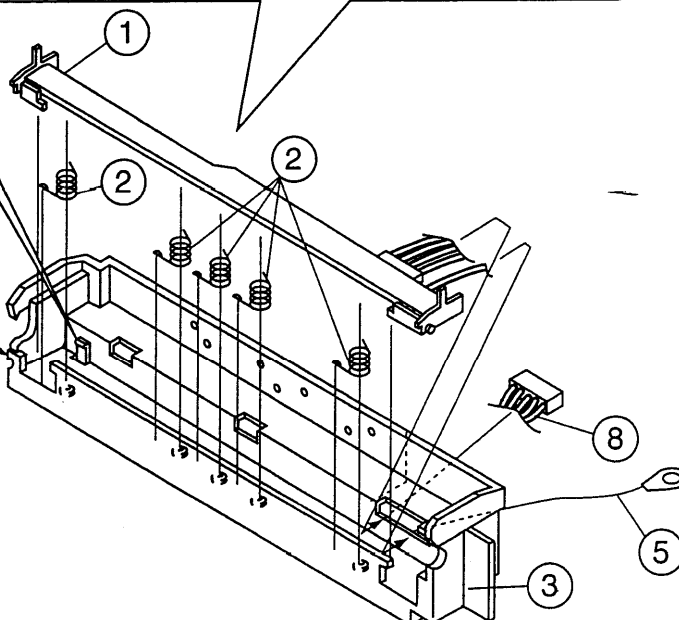
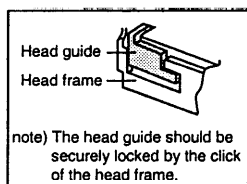
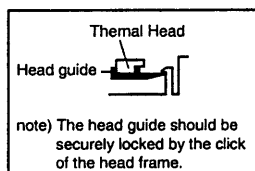
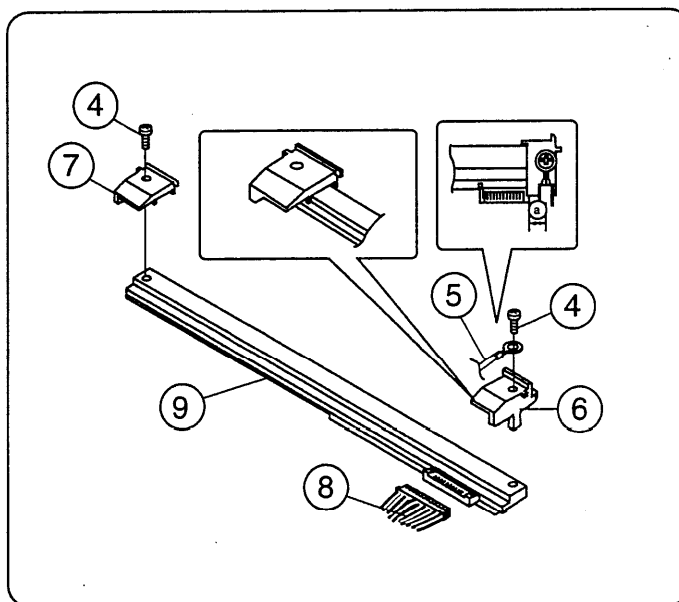
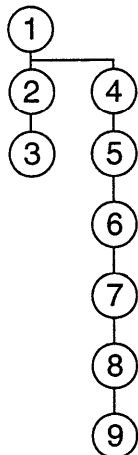


Fig. 3

**4 Document guide upper ass'y,
document guide lower ass'y**

- a. Remove the recording paper cover unit, the mechanism unit according to procedure 1-a.
- b. Remove the head frame unit from the mechanism unit according to procedure 2-b.
- c. Remove the document guide upper ass'y and document guide lower ass'y to the flowchart.

Parts list (Fig. 4)

No.	Part name	Q'ty
1	Under cabinet unit	1
2	Screw (3×10)	4
3	Upper cabinet unit	1
4	Connector	1
5	Hook switch lever A	1
6	Document guide lower ass'y	1
7	Document guide upper ass'y	1

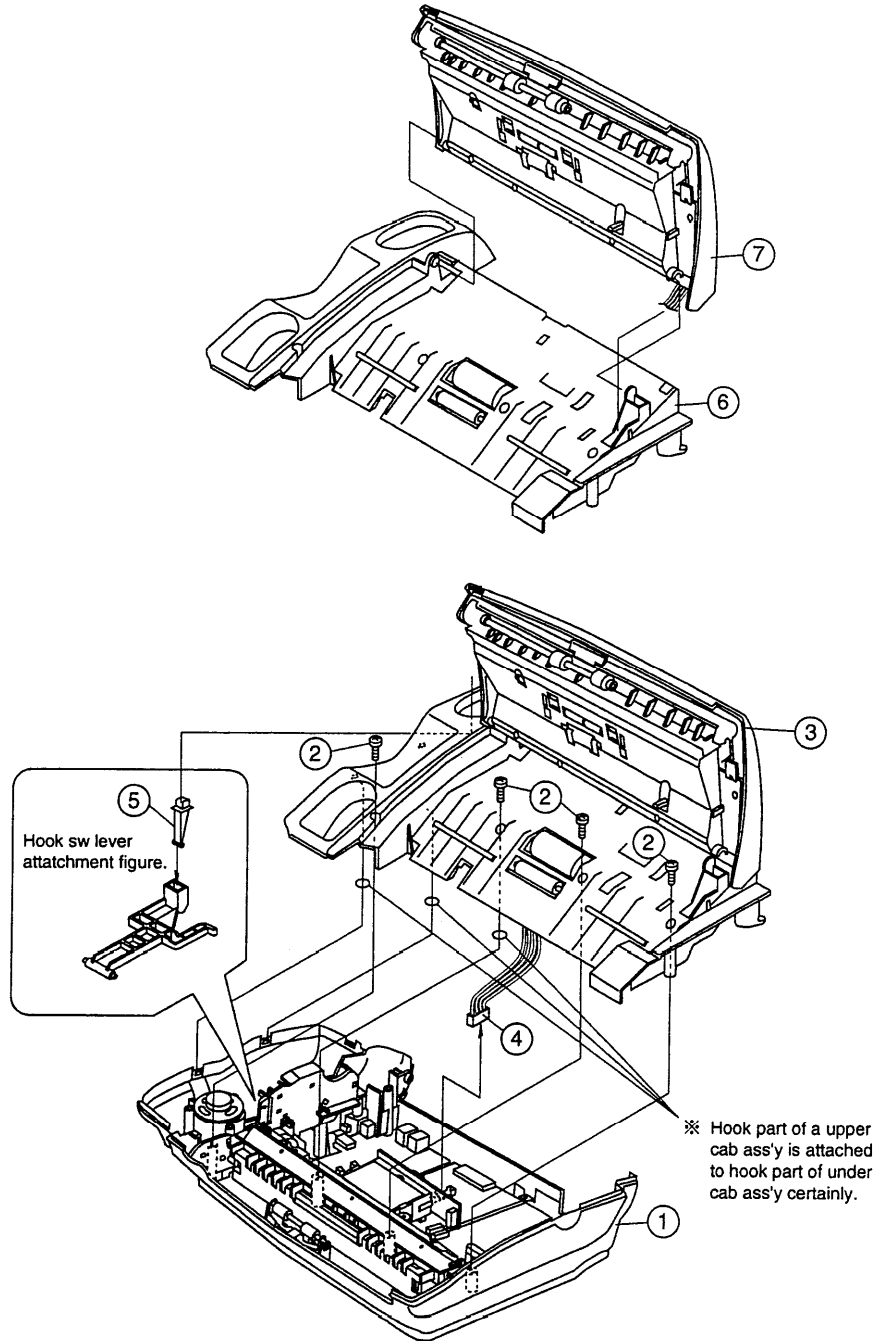
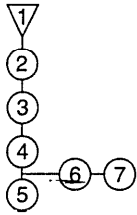


Fig. 4

5 Document guide lower ass'y

- a. Remove the recording paper cover unit, the mechanism unit according to the procedure 1-a.
- b. Remove the head frame unit from the mechanism unit according to procedure 2-b.
- c. Remove the document guide upper ass'y and document guide lower ass'y from the mechanism unit according to procedure 4-c.
- d. Remove the document guide lower ass'y to the flowchart.

Parts list (Fig. 5)

No.	Part name	Q'ty
1	Transfer roller gear	1
2	Roller bearing	2
3	Transfer roller	1
4	Paper feed roller gear ass'y	1
5	Roller bearing	2
6	Paper feed roller	1
7	Document guide lower	1

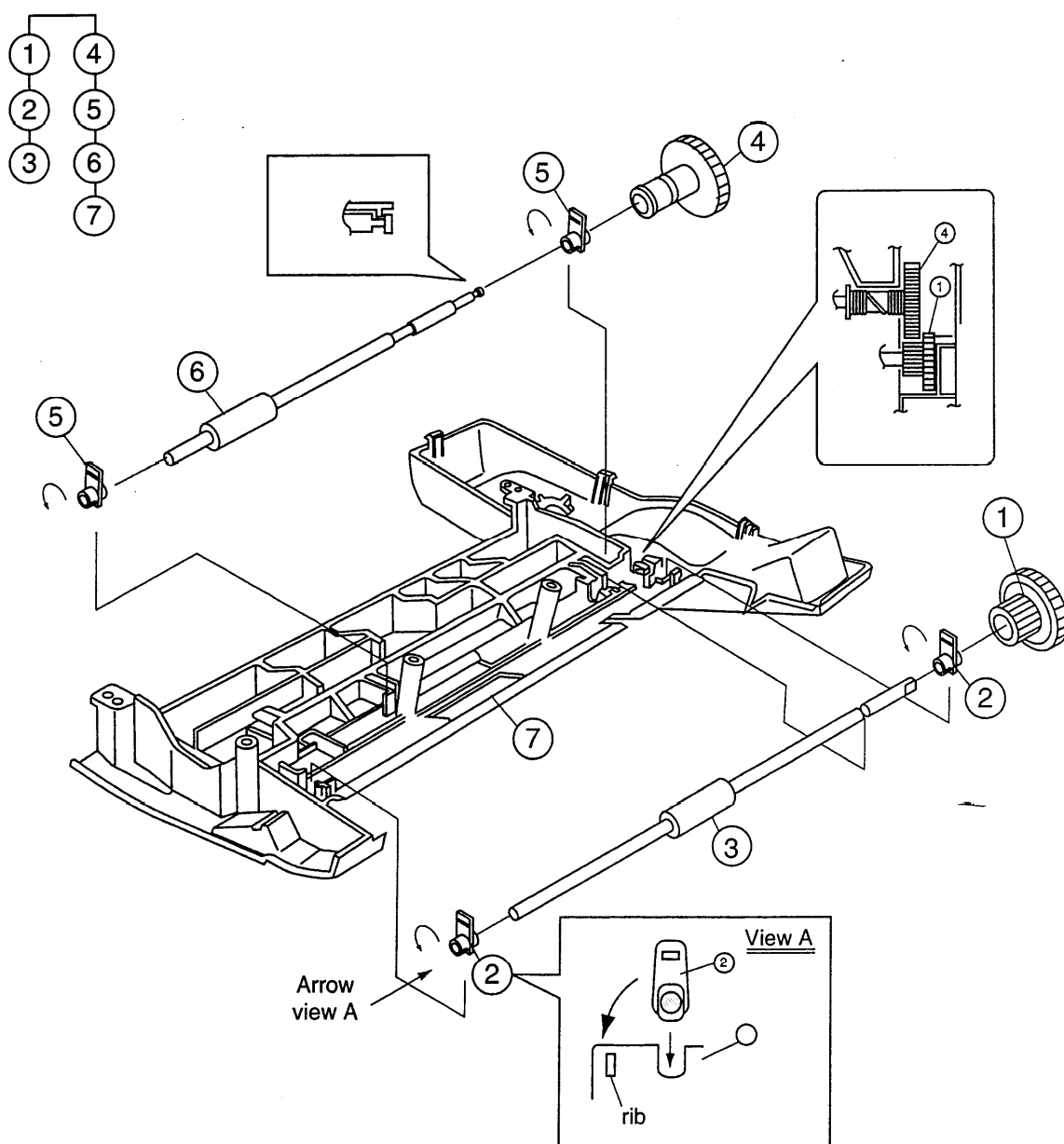


Fig. 5

6 Document guide upper ass'y

- a. Remove the recording paper cover unit, the mechanism unit according to procedure 1-a.
- b. Remove the head frame unit from the mechanism unit according to procedure 2-b.
- c. Remove the document guide upper ass'y and document guide lower ass'y from the mechanism unit according to procedure 4-c.
- d. Remove the document guide upper ass'y to the flowchart.

Parts list (Fig. 6)

No.	Part name	Q'ty	No.	Part name	Q'ty
1	Upper cabinet ass'y	1	12	Pinch roller spring	2
2	Screw (3x10)	2	13	Pinch roller shaft	1
3	Document guide upper ass'y	1	14	Pinch roller	2
4	Face sheet	1	15	Cancellation lever spring	1
5	Transfer gear	1	16	Panel lock lever	1
6	Transfer bearing	2	17	Front sensor lever	1
7	Transfer roller 2	1	18	Sensor lever return spring	1
8	Paper feed spring	1	19	Document sensor lever	1
9	Separation pressing plate	1	20	Sensor lever return spring	1
10	Paper feed spring	1	21	Document guide upper	1
11	Separation rubber plate	1			

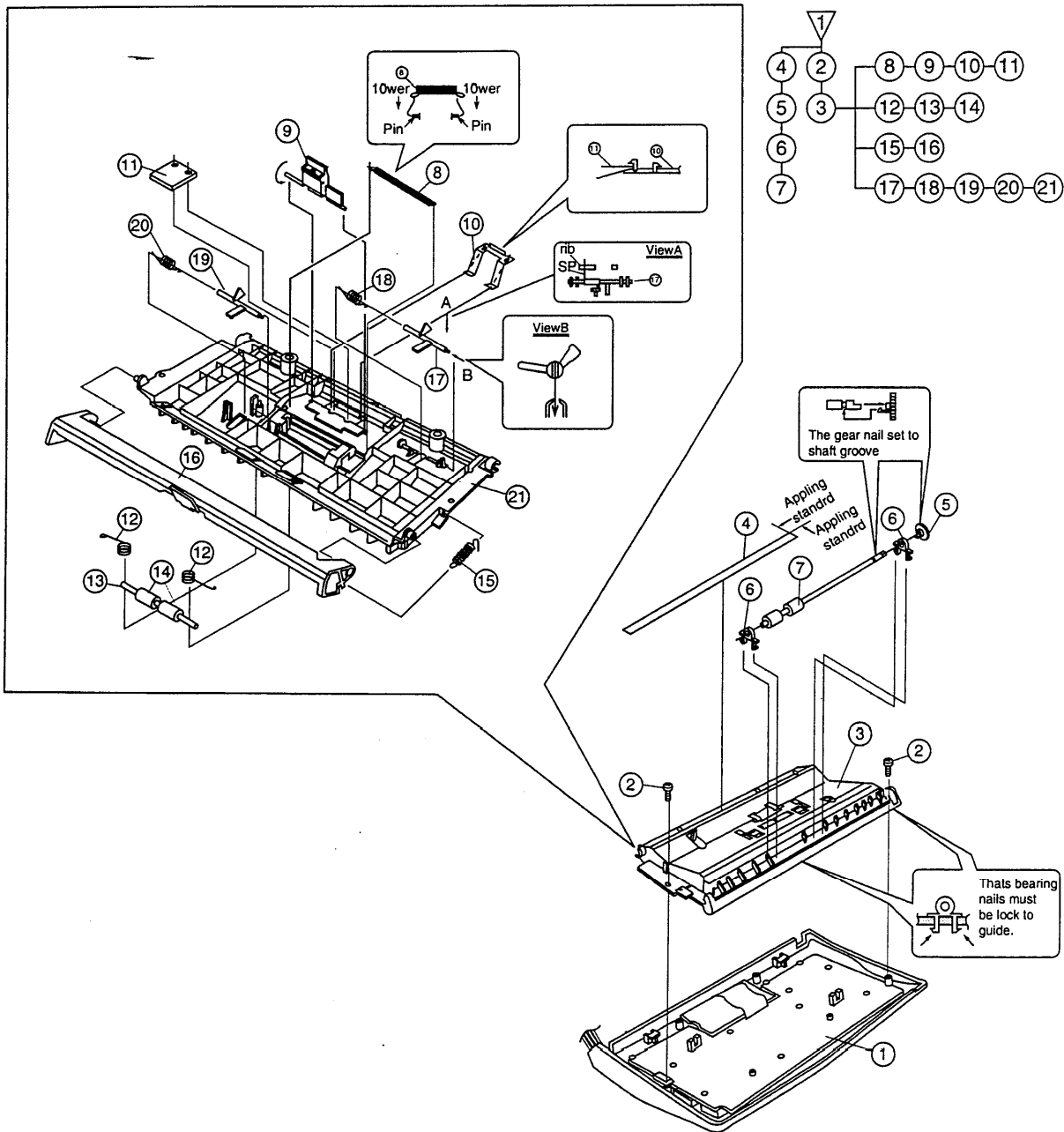


Fig. 6

7 Upper cabinet ass'y

- a. Remove the recording paper cover unit, the mechanism unit according to procedure 1-a.
- b. Remove the head frame unit from the mechanism unit according to procedure 2-b.
- c. Remove the document guide upper ass'y and document guide lower ass'y from the mechanism unit according to procedure 4-c.
- d. Remove the document guide upper ass'y from the upper cabinet ass'y according to procedure 6-d.
- e. Remove the upper cabinet ass'y to the flowchart.

Parts list (Fig. 7)

No.	Part name	Q'ty
1	Screw (2x6)	8
2	Insulation sheet	2
3	Operation panel PWB	1
4	Panel cable	1
5	Dial key	1
6	Direct key	1
7	Start key	1
8	Copy key	1
9	Volume key	1
10	Mode key	1
11	Panel unit ass'y	1
12	Anti vibration sheet (1)	1
13	Anti vibration sheet (2)	1

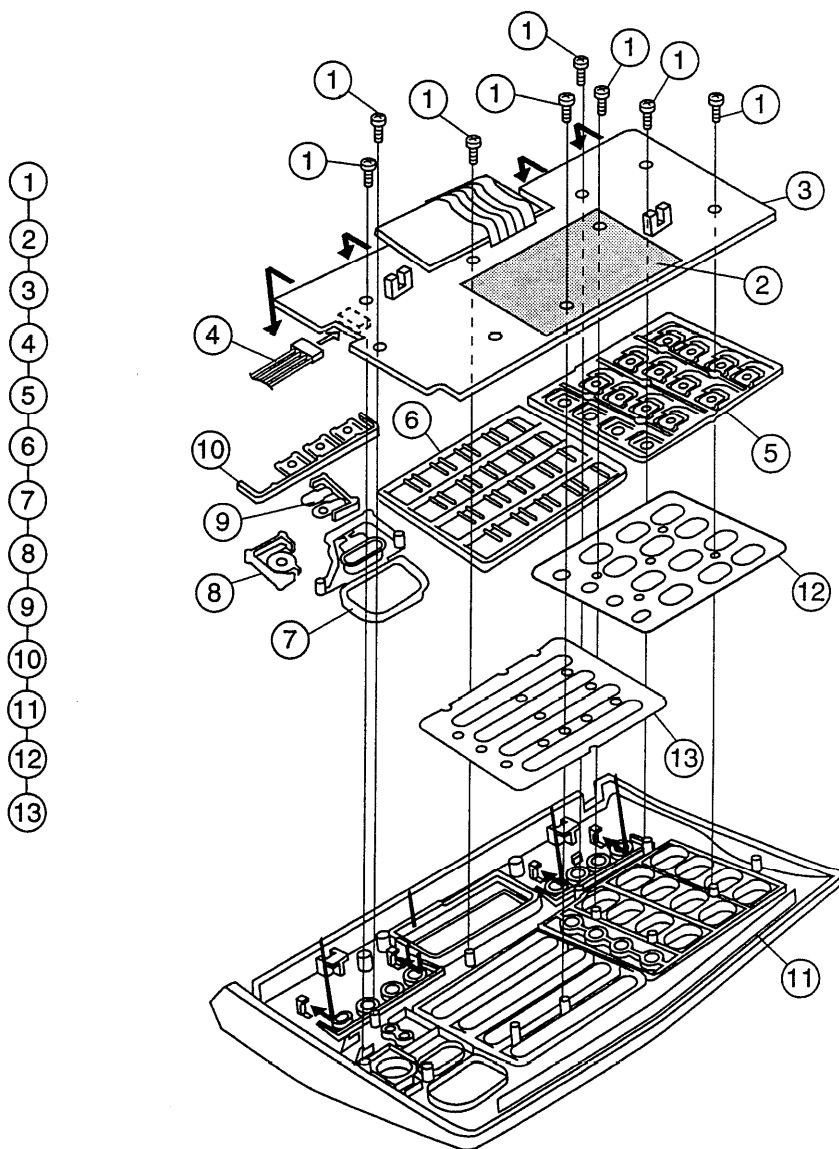


Fig. 7

8 Optical system unit

- a. Remove the recording paper cover unit, the mechanism unit according to procedure 1-a.
- b. Remove the head frame unit from the mechanism unit according to procedure 2-b.
- c. Remove the document guide upper ass'y and document guide lower ass'y from the mechanism unit according to procedure 4-c.
- d. Remove the optical system unit to the flowchart.

Parts list (Fig. 8)

No.	Part name	Q'ty	No.	Part name	Q'ty
1	Mechanism unit	1	12	Screw (2x6)	3
2	Connector	1	13	LED	1
3	Connector	1	14	Blind sheet	2
4	Optical system unit	1	15	Screw (3x4)	1
5	Screw	2	16	Mirror holding spring 1	1
6	CCD PWB	1	17	Screw (3x4)	1
7	Shading sheet	1	18	Mirror holding spring 2	1
8	Screw (3x6)	2	19	Mirror 2	2
9	Lens holding spring	1	20	Mirror 1	1
10	Lens	1	21	Mirror cushion	1
11	Reader glass	1	22	Optical frame	1
			23	Cushion	1

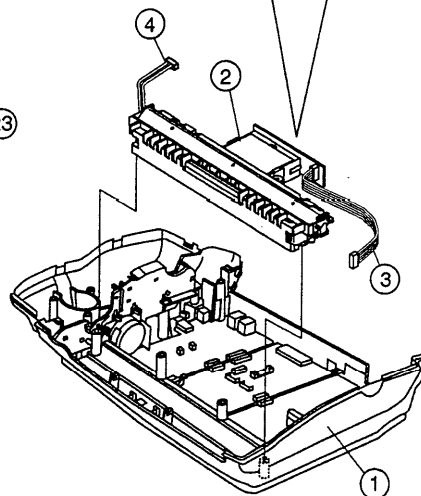
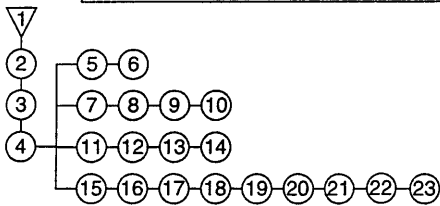
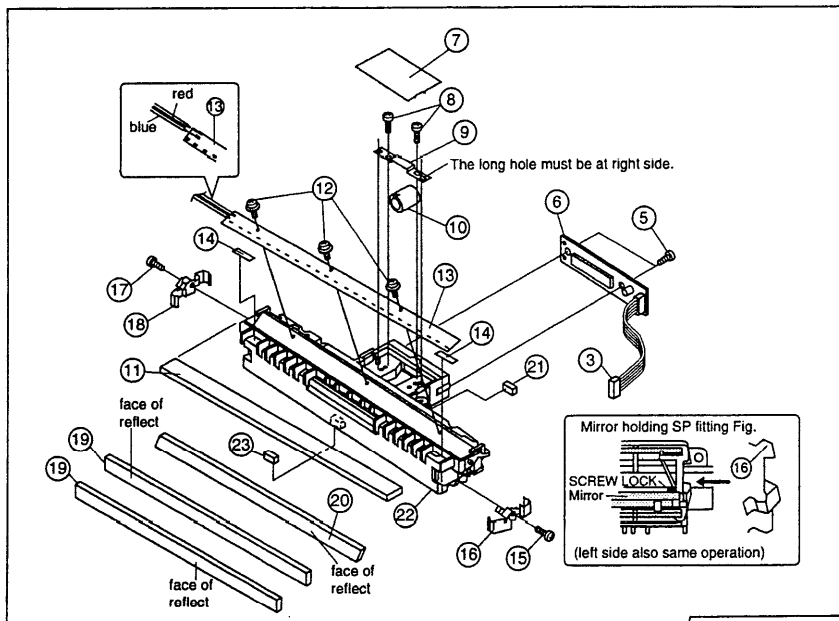


Fig. 8

[Note]

1. Attention the dection to arrow A.
2. Please don't touch to reflect face when fix the mirror to optical frame.
3. Check the dust fingerprints and damage when have a thats case clean by dry cloth.

9 Drive system unit and speaker

- a. Remove the recording paper cover unit, the mechanism unit according to procedure 1-a.
- b. Remove the head frame unit from the mechanism unit according to procedure 2-b.
- c. Remove the document guide upper ass'y and document guide lower ass'y from the mechanism unit according to procedure 4-c.
- d. Remove the optical system unit from the mechanism unit according to procedure 8-d.
- e. Remove the drive system unit and speaker to the flowchart.

Parts list (Fig. 9)

No.	Part name	Q'ty	No.	Part name	Q'ty
1	Mechanism unit	1	17	Reduction gear B	1
2	Screw (3x8)	1	18	Reduction gear A	1
3	Connector	1	19	Idler gear A	1
4	Drive system unit	1	20	Idler gear C	1
5	Hook switch lever A	1	21	Idler gear B	1
6	Connector	1	22	Planet gear lever A	1
7	Screw (3x10)	3	23	Planet gear spring	1
8	Speaker	1	24	Planet gear	2
9	Motor earth cable	1	25	Planet gear lever B	1
10	Motor	1	26	Planet gear spring	1
11	Heat sink	1	27	Planet gear	1
12	Cam hold spring	1	28	Change lever	1
13	Cam B	1	29	Drive system mounting frame	1
14	Cam A	1			
15	Detection switch	1	30	Pinch pressing spring 2	1
16	Idler gear A	2	31	Pinch roller 2	1
			32	Washer	3

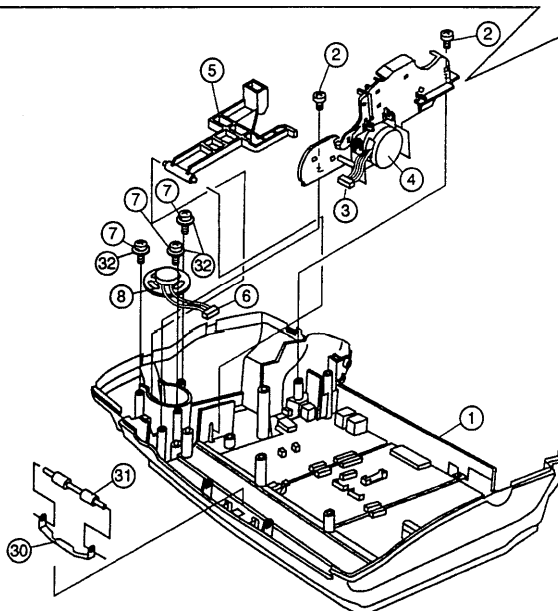
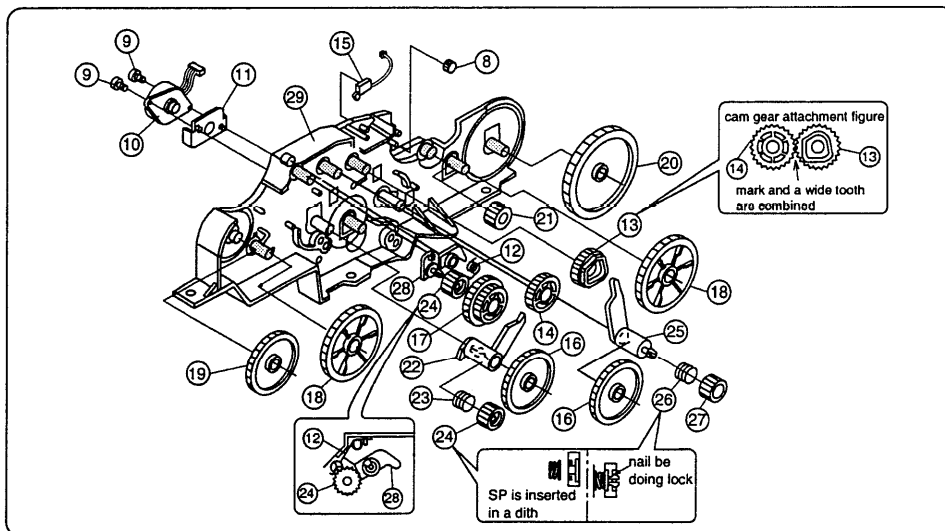
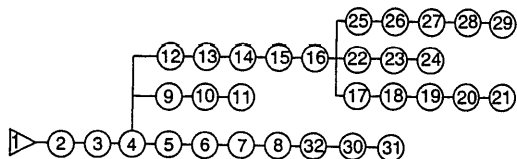


Fig. 9

10 PWB section

- a. Remove the recording paper cover unit, ROM cover and head cover from the mechanism unit according to procedure 1-a.
- b. Remove the head frame unit from the mechanism unit according to procedure 2-b.
- c. Remove the document guide upper ass'y and document guide lower ass'y from the mechanism unit according to procedure 4-c.
- d. Remove the optical system unit from the mechanism unit according to procedure 8-d.
- e. Remove the drive system unit and speaker from the mechanism unit according to procedure 9-e.
- f. Remove the PWB's and AC cord to the flowchart.

Parts list (Fig. 10)

No.	Part name	Q'ty
1	Mechanism unit	1
2	Screw (3x10)	5
3	Power supply PWB	1
4	Control PWB	1
5	TEL/LIU PWB	1

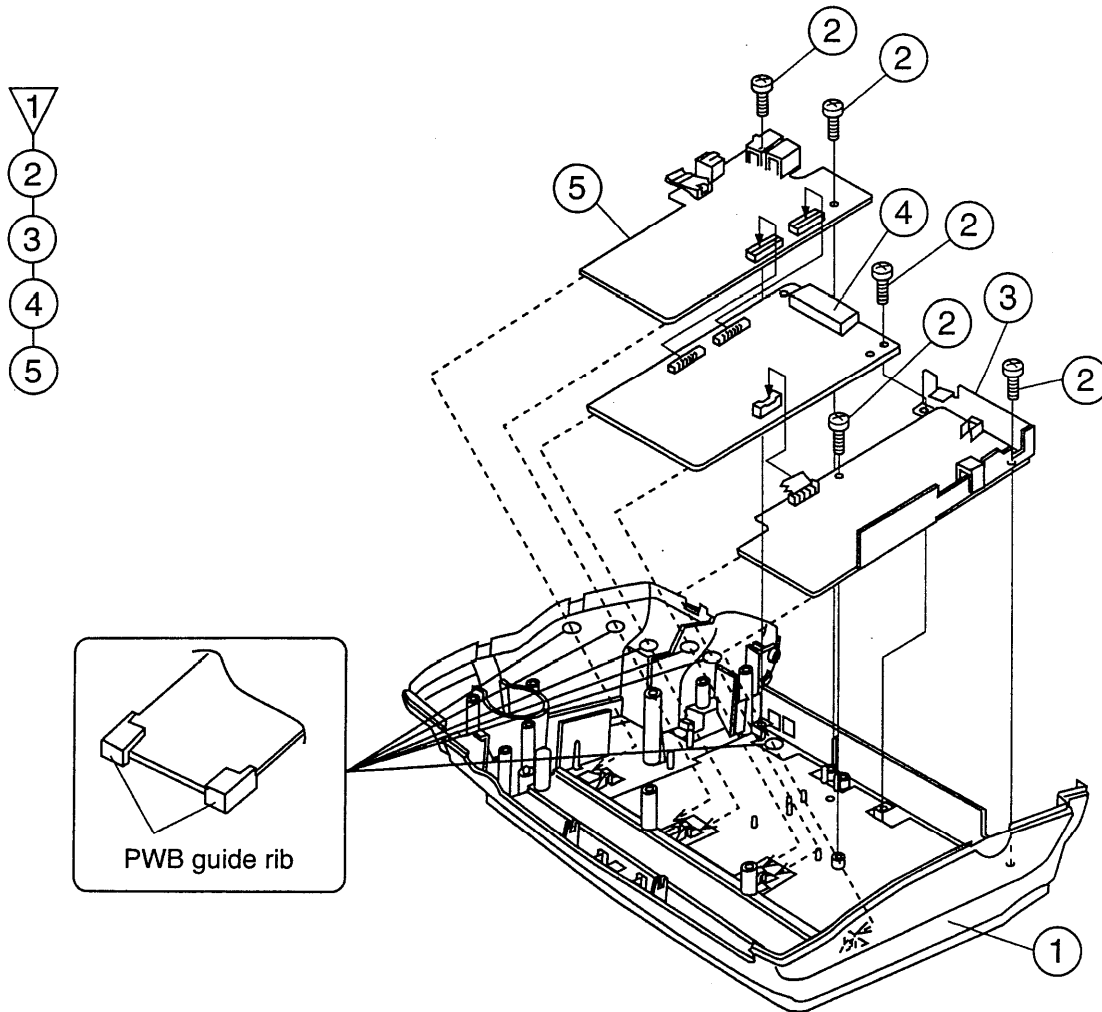


Fig. 10

11 Wire treatment

- a. Perform wire treatment carefully and deliberately.
- b. For wire treatment procedures which are not described in this section, refer to the section for that portion of the unit.

Parts list (Fig. 11)

No.	Part name	Q'ty
1	Band	4
2	Core	1
3	Core	2

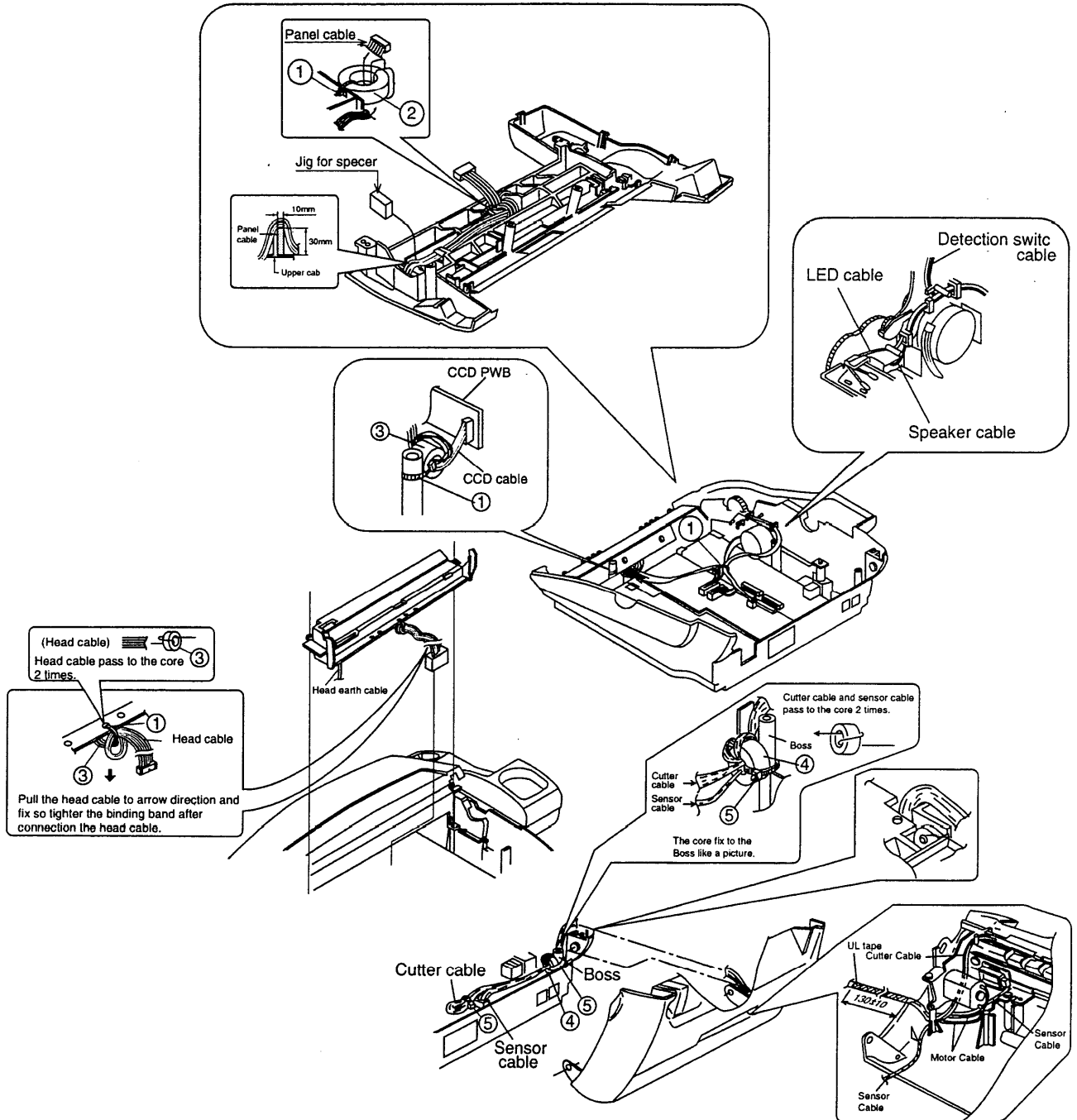
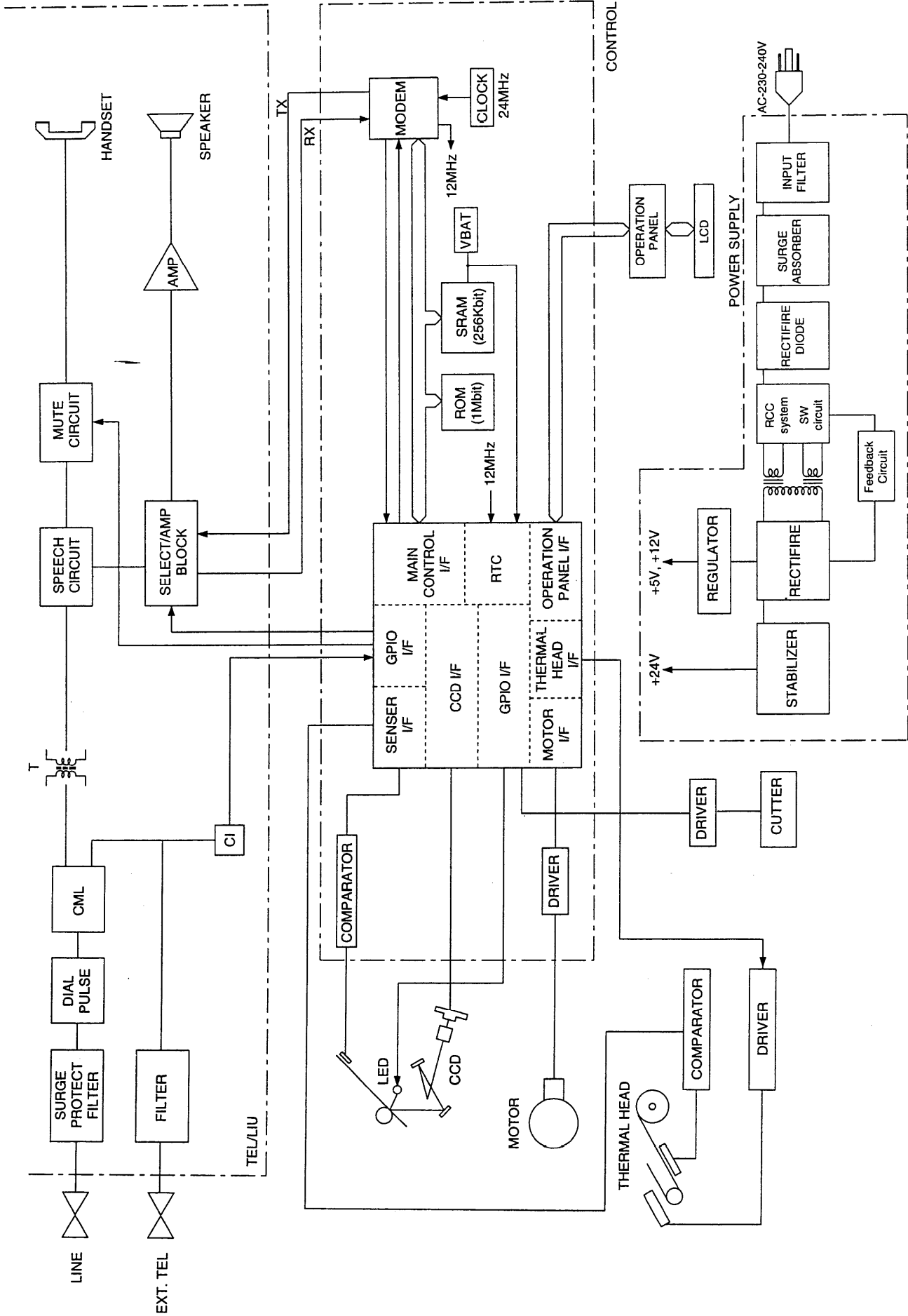


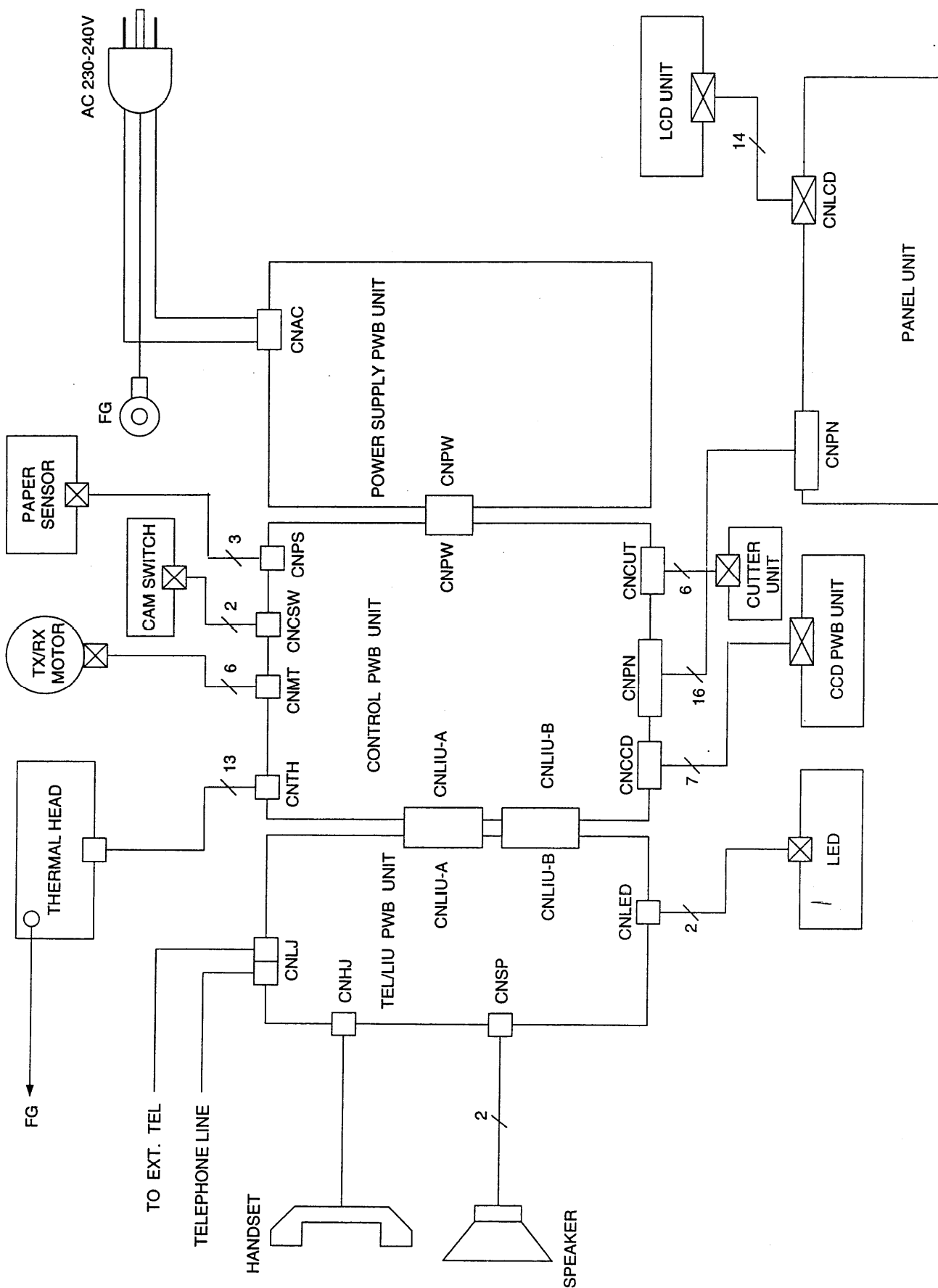
Fig. 11

CHAPTER 4. DIAGRAMS

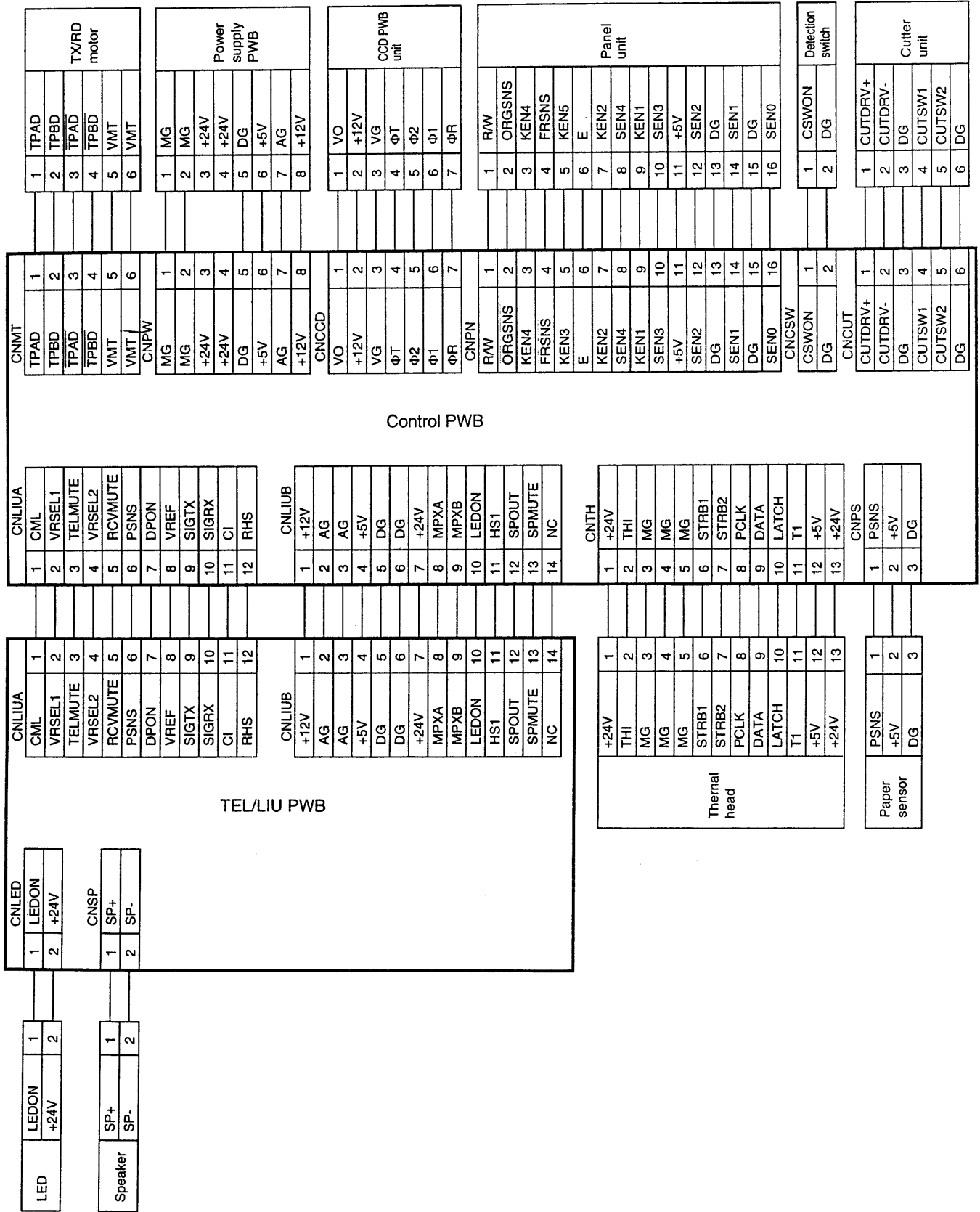
[1] Block diagram



[2] Wiring diagram



[3] Point-to-point diagram



CHAPTER 5. CIRCUIT DESCRIPTION

[1] Circuit description

1. General description

The compact design of the control PWB is obtained by using ROCKWELL fax engine in the main control section and high density printing of surface mounting parts. Each PWB is independent according to its function as shown in Fig. 1.

2. PWB configuration

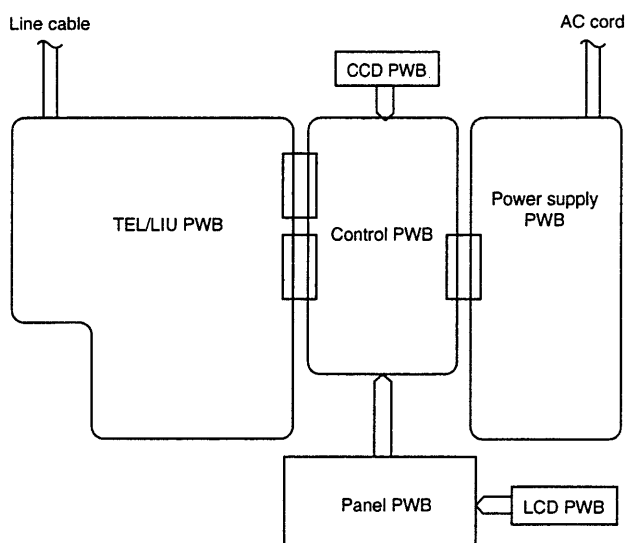


Fig. 1

1) Control PWB

The control PWB controls peripheral PWBs, mechanical parts, transmission, and performs overall control of the unit.

This machine employs a 1-chip modem (R96SHF) which is installed on the control PWB.

2) TEL/LIU PWB

This PWB controls connection of the telephone line to the unit.

3) Power supply PWB

This PWB provides voltages of +5V, +12V, and +24V to the another PWB.

4) Panel PWB

The panel PWB allows input of the operation keys.

5) CCD PWB

This PWB controls the pickup optical device.

6) LCD PWB

This PWB controls the LCD display.

3. Operational description

Operational descriptions are given below:

- Transmission operation

When a document is loaded in standby mode, the state of the document sensor is sensed via the 1 chip fax engine (SFE-LC). If the sensor signal was on, the motor is started to bring the document into the standby position. With depression of the START key in the off-hook state, transmission takes place.

Then, the procedure is sent out from the modem and the motor is rotated to move the document down to the scan line. In the scan processor, the signal scanned by the CCD is sent to the internal image processor and the AD converter to convert the analog signal into binary data. This binary data is transferred from the scan processor to the image buffer within the RAM and encoded and stored in the transmit buffer of the RAM. The data is then converted from parallel to serial form by the modem where the serial data is modulated and sent onto the line.

- Receive operation

There are two ways of starting reception, manual and automatic. Depression of the START key in the off-hook mode in the case of manual receive mode, or CI signal detection by the LIU in the automatic receive mode.

First, the SFE-LC controls the procedure signals from the modem to be ready to receive data. When the program goes into phase C, the serial data from the modem is converted to parallel form in the modem interface of the 1 chip fax engine (SFE-LC) which is stored in the receive buffer of the RAM. The data in the receive buffer is decoded software-wise to reproduce it as binary image data in the image buffer. The data is DMA transferred to the recording processor within the main control gate array which is then converted from parallel to serial form to be sent to the thermal head. The data is printed line by line by the SFE-LC which is assigned to control the motor rotation and strobe signal.

- Copy operation

To make a copy on this facsimile, the COPY key is pressed when the machine is in stand-by with a document on the document table and the telephone set is in the on-hook state.

First, depression of the COPY key advances the document to the scan line. Similar to the transmitting operation, the image signal from the CCD is converted to a binary signal in the DMA mode via the 1 chip fax engine (SFE-LC) which is then sent to the image buffer of the RAM. Next, the data is transferred to the recording processor in the DMA mode to send the image data to the thermal head which is printed line by line. The copying takes place as the operation is repeated.

[2] Circuit description of control PWB

1. General description

Fig. 2 shows the functional blocks of the control PWB, which is composed of 4 blocks.

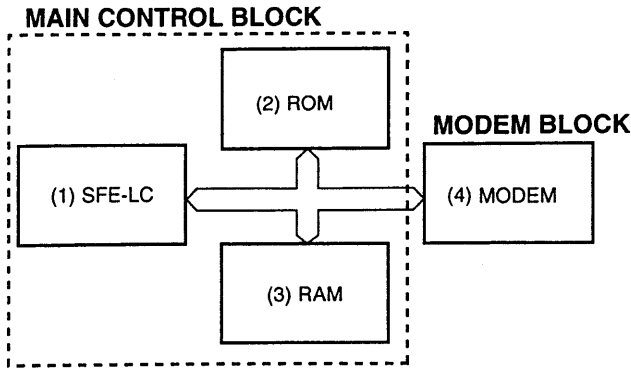


Fig. 2 ControlPWB functional block diagram

2. Description of each block

(1) Main control block

The main control block is composed of ROCKWELL 1 chip fax engine (SFE-LC), ROM (128KByte), RAM (8KByte) and Modem (R96SHF). Devices are connected to the bus to control the whole unit.

1) SFE-LC (IC3) : pin-144 QFP (SFE-LC)

2) R96SHF (DFXL) (IC5) : pin-100 GFP (MODEM)

The FAXENGINE Integrated Facsimile Controllers.

SFE-LC, contains an internal 8 bit microprocessor with an external 2 Mbyte address space and dedicated circuitry optimized for facsimile image processing and facsimile machine control and monitoring.

3) 27C010 (IC2): pin-32 DIP (ROM)

EPROM of 1Mbit equipped with software for the main CPU.

4) M5M5255CFP-70LL (IC4): pin-28 SOP (RAM)

Line memory for the main CPU system RAM area and coding/decoding process. Used as the transmission buffer.

Memory of recorded data such as daily report and auto dials. When the power is turned off, this memory is backed up by the lithium battery.

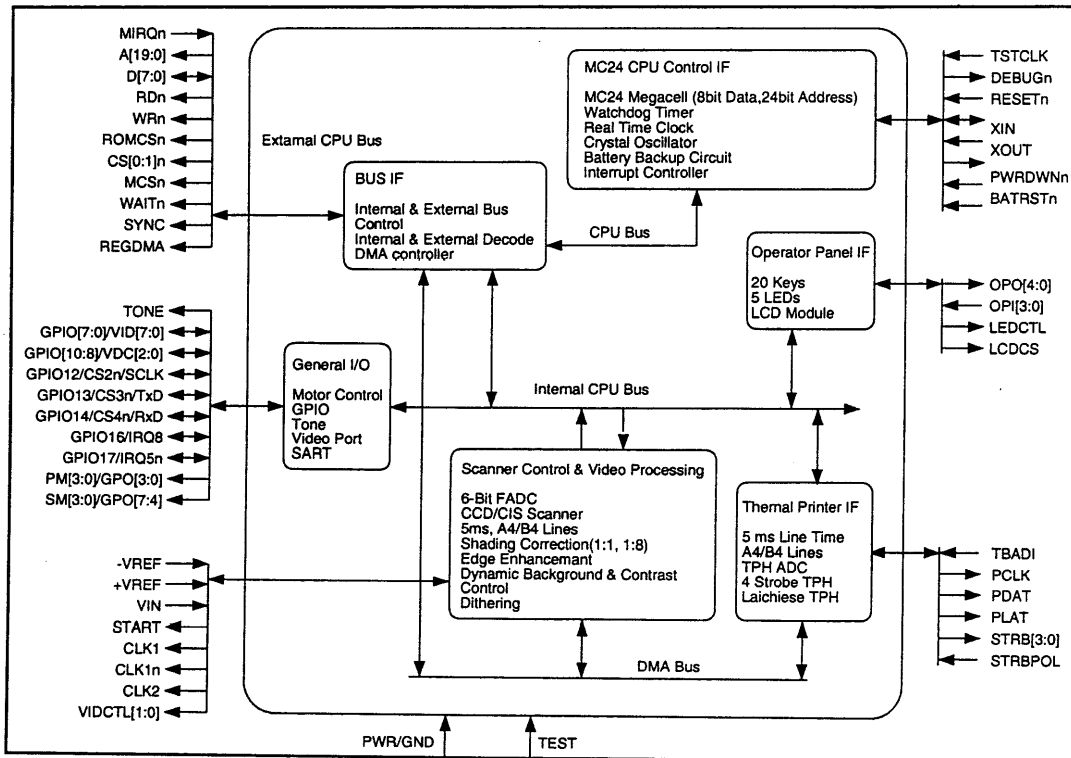


Fig. 3

SFE-LC (IC3) terminal descriptions

Pin Name	Pin No.	I/O	Input Type	Output Type	Pin Description (Active low signals have an "n" pin name ending.)
CPU Control Interface					
MIRQn	135	I	HU	–	Modem interrupt. (Hysteresis In, Internal Pullup.)
SYSCLK	133	I	H	–	System clock. (Hysteresis In.)
TSTCLK	130	O	–	3XC	Test clock.
Bus Control Interface					
A[19:0]	[5:6][8:13] [15:20][22:27]	O	T	3XT	Address bus (20-bit).
D[7:0]	[136:139] [141:144]	I/O	T	3XT	Data bus (8-bit).
RDn	128	O	–	3XTT	Read strobe.
WRn	127	O	–	3XTT	Write strobe.
ROMCSn	120	O	–	2XT	ROM chip select.
CS1n	122	O	–	2XT	I/O chip select.
CS0n	57	O	–	2XTT	SRAM chip select. (Battery powered.)
MCSn	121	O	–	2XC	Modem chip select.
SYNC	126	O	–	2XC	Indicates CPU op code fetch cycle (active high).
REGDMA	124	O	–	3XC	Indicates REGSEL cycle and DMA cycle.
WAITn	125	O	–	3XC	Indicates current TSTCLK cycle is a wait state or a halt state.
Prime Power Reset Logic and Test					
DEBUGn	129	I	HU	–	External non-maskable input (NMI).
RESETn	131	I/O	HU	2XO	XFC-B Reset.
TEST	58	I	C	–	Sets Test mode (battery powered).
Battery Power Control and Reset Logic					
XIN	59	I	OSC	–	Crystal oscillator input pin.
XOUT	60	O	–	OSC	Crystal oscillator output pin.
PWRDWNn	62	I	H	–	Indicates loss of prime power (results in NMI).
BATRSTn	61	I	H	–	Battery power reset input.
Scanner Interface					
START	101	O	–	2XS	Scanner shift gate control.
CLK1	100	O	–	2XS	Scanner clock.
CLK1n	99	O	–	2XS	Scanner clock-inverted.
CLK2	98	O	–	2XS	Scanner reset gate control (or clock for CIS scanner).
VIDCTL[1:0]	[97:96]	O	–	2XC	Control for video preprocessing circuits.
Printer Interface					
PCLK	29	O	–	3XC	Thermal Print Head (TPH) clock.
PDAT	30	O	–	2XP	Serial printing data (to TPH).
PLAT	31	O	–	3XP	TPH data latch.
STRB[3:0]	[33:36]	O	–	1XP	Strobe signals for the TPH.
STRBPOL	37	I	C	–	Sets strobe polarity, active high/low.

Pin Name	Pin No.	I/O	Input Type	Output Type	Pin Description
Operator Panel Interface					
OPO[4:0]	[42:44][46:47]	O	-	2XL	Keyboard/LED strobe [4:0].
OPI[3:0]	[49:52]	I	HU	-	Keyboard return [3:0]. (Pullup. Hysteresis In.)
LEDCTL	55	O	-	4XC	Indicates outputs OPO [4:0] are for LEDs.
LCDCS	54	O	-	1XC	LCD chip select.
General Purpose I/O					
GPIO[7:0]/VID[7:0]	[86:87][89:94]	I/O	H	2XC	Programmable: GPIO (8 lines) or video data bus.
GPIO[10:8]/VDC[2:0]	[83:85]	I/O	H	2XC	Programmable: GPIO (3 lines) or video data control signals.
GPIO12/CS2n/SCLK	80	I/O	H	2XC	Programmable: GPIO line, I/O chip select or SCLK (SART).
GPIO13/CS3n/TXD	79	I/O	H	2XC	Programmable: GPIO line, I/O chip select or TXD (SART).
GPIO14/CS4n/RXD	78	I/O	H	2XC	Programmable: GPIO line, I/O chip select or RXD (SART).
GPIO16/IRQ8	76	I/O	H	1XC	Programmable: GPIO line or active high interrupt.
GPIO17/IRQ5n	75	I/O	H	1XC	Programmable: GPIO line or active low interrupt.
Miscellaneous					
SM[3:0]/GPO[7:4]	[103:106]	O	-	1XC	Programmable: scan motor control pins or GPO pins.
PM[3:0]/GPO[3:0]	[115:118]	O	-	1XC	Programmable: print motor control pins or GPO pins.
TONE	119	O	-	1XC	Tone output signal.
Power, Reference Voltages, Ground					
-Vref	66	I	-VR	-	Negative Reference Voltage for Video A/D.
+Vref	68	I	+VR	-	Positive Reference Voltage for Video A/D.
ADGA	69		VADG		A/D Analog Ground.
ADVA	70		VADV		A/D Analog Power.
ADGD	72		VADG		A/D Digital Ground.
ADVD	71		VADV		A/D Digital Power.
VIN	67	I	VA	-	Analog Video A/D input.
THADI	65	I	TA	-	Analog Thermal A/D input.
VSS (8)	134, 132, 95, 88, 53, 45, 28, 21				Digital Ground.
VDD (7)	140, 123, 102, 81, 48, 41, 14				Digital Power.
VBAT	63				Battery Power.
No Connection					
NC	1, 2, 3, 4, 7, 32, 38, 39, 40, 56, 64, 73, 74, 77, 82, 107, 108, 109, 110-114				No connection.

(2) Panel control

The following controls are performed by the SFE-LC.

- Operation panel key scanning
- Operation panel LCD display

(3) Mechanism/recording control block

- Recording control block diagram (1)

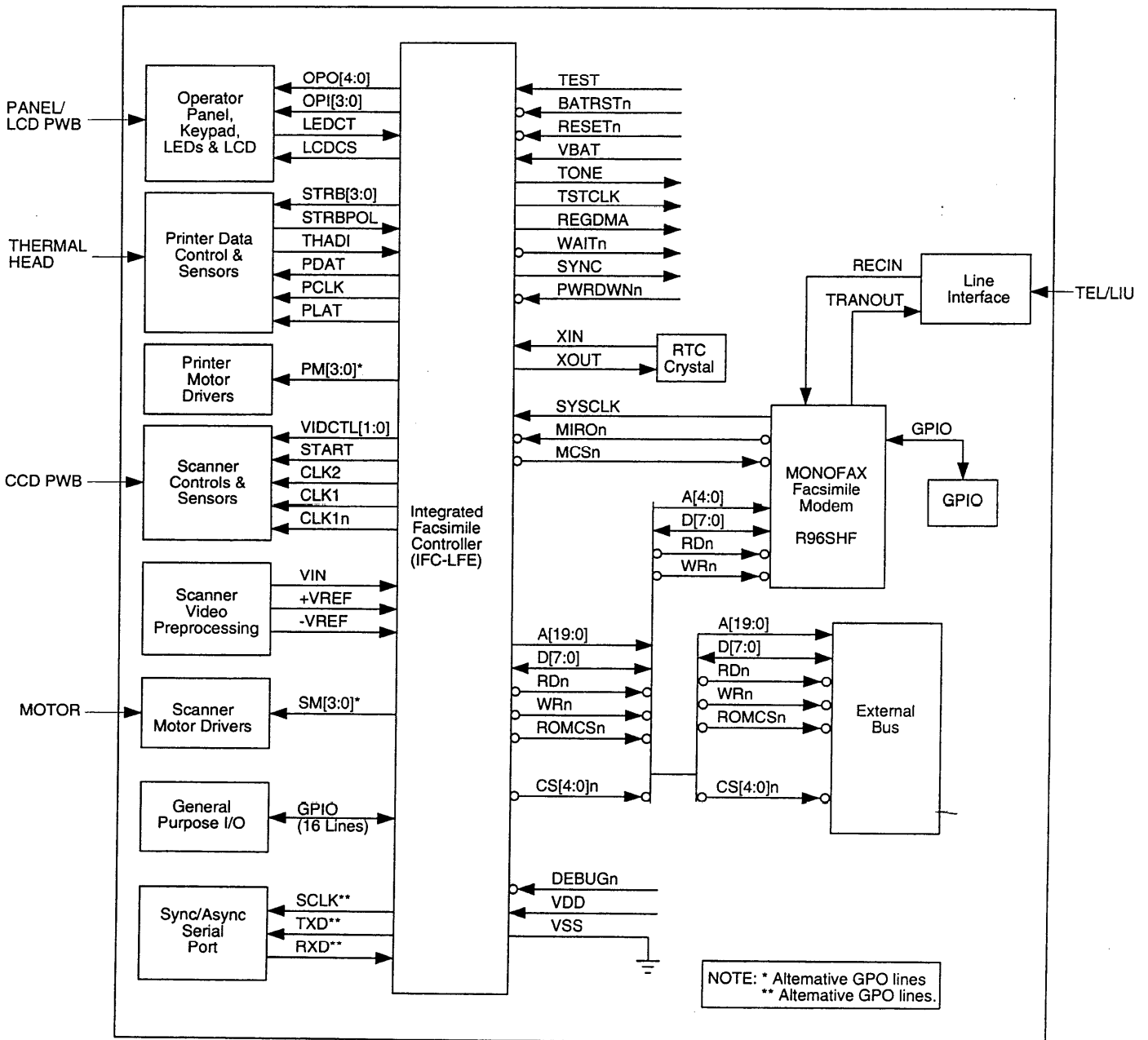


Fig. 4

(4) Modem (R96DFXL) block

INTRODUCTION

The Rockwell R96DFXL MONOFAX modem is a synchronous 9600 bits per second (bps) half-duplex modem with error detection and DTMF reception. It has low power consumption and requires only a single +5V DC power supply. The modem is housed in a single VLSI device package.

The modem can operate over the public switched telephone network (PSTN) through line terminations provided by a data access arrangement (DAA).

The R96SHF is designed for use in Group 3 facsimile machines. The modem satisfies the requirements specified in CCITT recommendations V.29, V.27 ter, V.21 Channel 2 and T.4, and meets the binary signaling requirements of T.30.

The modem can operate at 9600, 7200, 4800, 2400, or 300 bps, and also includes the V.27 ter short training sequence option.

The modem can also perform HDLC framing according to T.30 at 9600, 7200, 4800, 2400, or 300 bps.

The modem features a programmable DTMF receiver and three programmable tone detectors which operate concurrently with the V.21 channel 2 receiver.

The voice mode allows the host computer to efficiently transmit and receive audio signals and messages.

The modem is available in either a 100-pin plastic quad flat pack (PQFP) or a 64-pin quad in-line package (QUIP).

General purpose input/output (GPIO) pins are available for host assignment in the 100-pin PQFP.

The modem's small size, single voltage supply, and low power consumption allow the design of compact system enclosures for use in both office and home environments.

MONOFAX is a registered trademark of Rockwell International.

FEATURES

- Group 3 facsimile transmission/reception
 - CCITT V.29, V.27 ter, T.30, V.21 Channel 2, T.4
 - HDLC Framing at all speeds
- V.27 ter short train
- Concurrent DTMF, FSK, and tone reception
- Voice mode transmission/reception
- Half-duplex (2-wire)
- Programmable maximum transmit level:
 - 0 dBm to -15 dBm
- Programmable transmit analog attenuation:
 - 0 dB to 14 dB in 2 dB steps
- Receive dynamic range: 0 dBm to -43 dBm
- Programmable dual tone generation
- Programmable tone detection
- Programmable turn-on and turn-off thresholds
- Programmable interface memory interrupt
- Diagnostic capability
 - Allows telephone line quality monitoring
- Equalization
 - Automatic adaptive equalizer
 - Fixed digital compromise equalizer
- DTE interface: two alternate ports
 - Selectable microprocessor bus (6500 or 8085)
 - CCITT V.24 (EIA-232-D compatible) interface
- TTL and CMOS compatible
- Low power consumption: 275 mW (typical)
- Single Package
 - 100-pin PQFP
 - 64-pin QUIP
- Single +5VDC power supply
- Software compatible with R96MFX, R96EFX, R96SHF, and R96VFX modems

R96DFXL (IC5) Hardware Interface Signals**Pin Signals – 100-Pin PQFP**

Pin No.	Signal Name	I/O Type
1	GP03	IA/OB
2	GP04	IA/OB
3	GP05	IA/OB
4	GP06	IA/OB
5	GP07	IA/OB
6	0VD2	GND
7	0VD2	GND
8	D7	IA/OB
9	D6	IA/OB
10	D5	IA/OB
11	D4	IA/OB
12	D3	IA/OB
13	D2	IA/OB
14	D1	IA/OB
15	D0	IA/OB
16	0VD2	GND
17	0VA	GND
18	RAMPIN	R
19	NC	
20	NC	
21	0VA	GND
22	+5VD2	PWR
23	0VD1	GND
24	SWGAINI	R
25	ECLKIN1	R
26	SYNCIN1	R
27	NC	
28	NC	
29	NC	
30	0VA	GND
31	NC	
32	NC	
33	NC	
34	DAIN	R
35	ADOUT	R
36	BYPASS	IC
37	RCVI	R
38	TXLOSS3	IC
39	TXLOSS2	IC
40	TXLOSS1	IC
41	NC	
42	NC	
43	0VA	GND
44	TXOUT	AA
45	RXIN	AB
46	+5VA	PWR
47	0VA	GND
48	AGD	R
49	AOUT	R
50	0VD1	GND
51	NC	
52	IRQ	OC
53	WRITE-R/W	IA
54	CS	IA
55	READ-φ2	IA
56	RS4	IA
57	RS3	IA
58	RS2	IA
59	RS1	IA

Pin No.	Signal Name	I/O Type
60	RS0	IA
61	GP13	IA/OB
62	NC	
63	GP11	IA/OB
64	RTS	IA
65	EN85	R
66	0VD2	GND
67	POR1	ID
68	XTLI	R
69	XTLO	R
70	XCLK	OD
71	YCLK	OD
72	+5VD1	PWR
73	DCLKI	R
74	SYNCIN2	R
75	GP16	IA/OB
76	GP17	IA/OB
77	0VD2	GND
78	CTS	OA
79	TXD	IA
80	0VD2	GND
81	0VD2	GND
82	DCLK	OA
83	EYESYNC	OA
84	EYECLKX	OA
85	EYECLK	OA
86	EYEX	OA
87	ADIN	R
88	DAOUT	R
89	0VD2	GND
90	EYEX	OA
91	GP21	IA/OB
92	0VD2	GND
93	GP20	IA/OB
94	GP19	IA/OB
95	RXD	OA
96	RLSD	OA
97	0VD2	GND
98	RCVO	R
99	SWGAINO	R
100	GP02	IA/OB

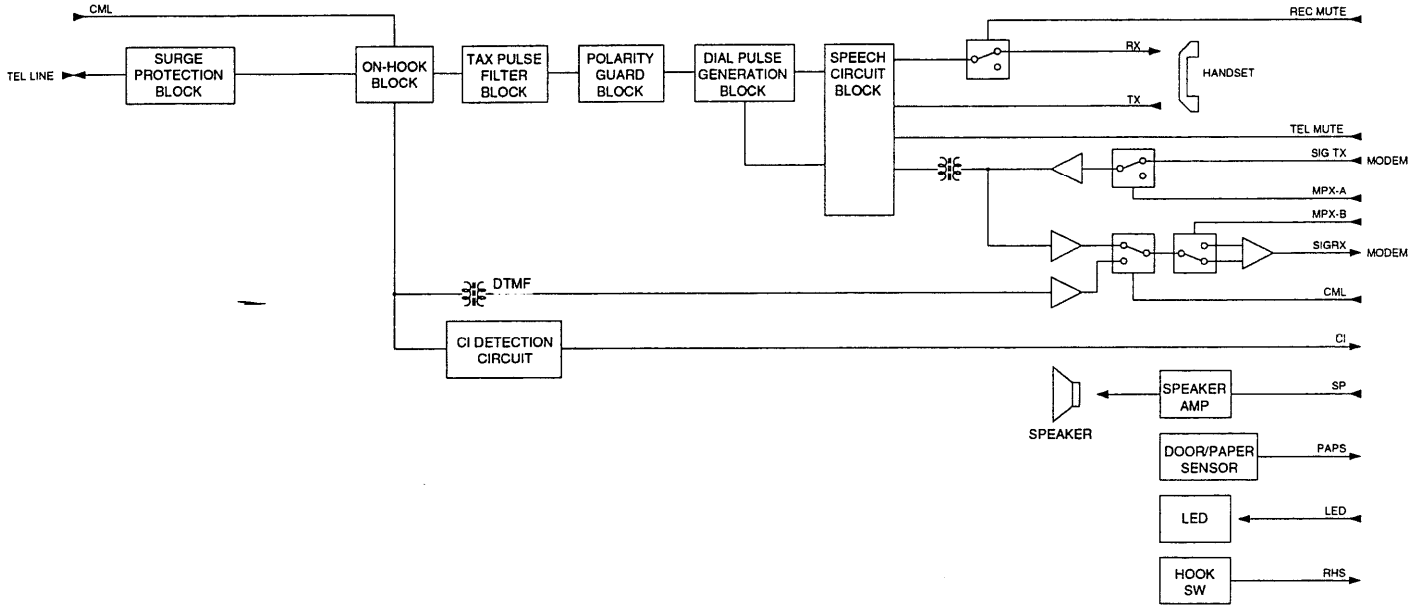
Notes:

1. NC = No connection; leave pin disconnected (open).
2. I/O Type: Digital signals: see Table 9;
Analog signals: see Table 10.
3. R = Required modem inter-connection; no connection to host equipment.

[3] Circuit description of TEL/LIU PWB

(1) TEL/LIU block operational description

1) Block diagram



2) Circuit description

The TEL/LIU PWB is composed of the following 10 blocks.

1. CI block
2. Polarity guard block
3. Pulse transmitting block
4. ON-hook block
5. Hook detection block
6. Speech circuit block
7. Speaker amplifier block
8. Power supply and bias circuit
9. Sensor block
10. Signal selection

3) Block description

1. CI block

This block is composed of a photo coupler (PC1) and is used to convert ringer signal into a digital signal.

2. Polarity guard block

This block is composed of diode bridge (REC1) and is used to supply a current and voltage of the same polarity to the telephone circuit regardless of reversion of polarity in the telephone circuit.

3. Pulse transmitting block

This block is composed of transistor (Q1), photo coupler (PC6) and zener diode. Dial pulses supplied from CPU are amplified by transistor (Q1) through a photo coupler (PC6) to the telephone line.

4. ON-hook block

This block is composed of CML relay (CML), and CML is for connection of the telephone line.

5. Hook detection block

This block is composed of hook switch (RHS), and is used to detect on/off of the hook switch and to inform CPU of connection/open of the telephone line.

6. Speech circuit block

This block is composed of the speech IC (IC1), and is equipped with 2-line/4-line select circuit, auto pad circuit, and all other circuit.

7. Speaker amplifier block

This block is composed of the speech amplifier IC (IC102), and is used to amplify voice signal in monitoring or in speaker reception with the amplifier IC and to supply to the speaker.

8. Power supply and bias circuit

+24V, +12V and +5V are supplied from the control unit through the connector CNLIUB-1-7.

9. Sensor block

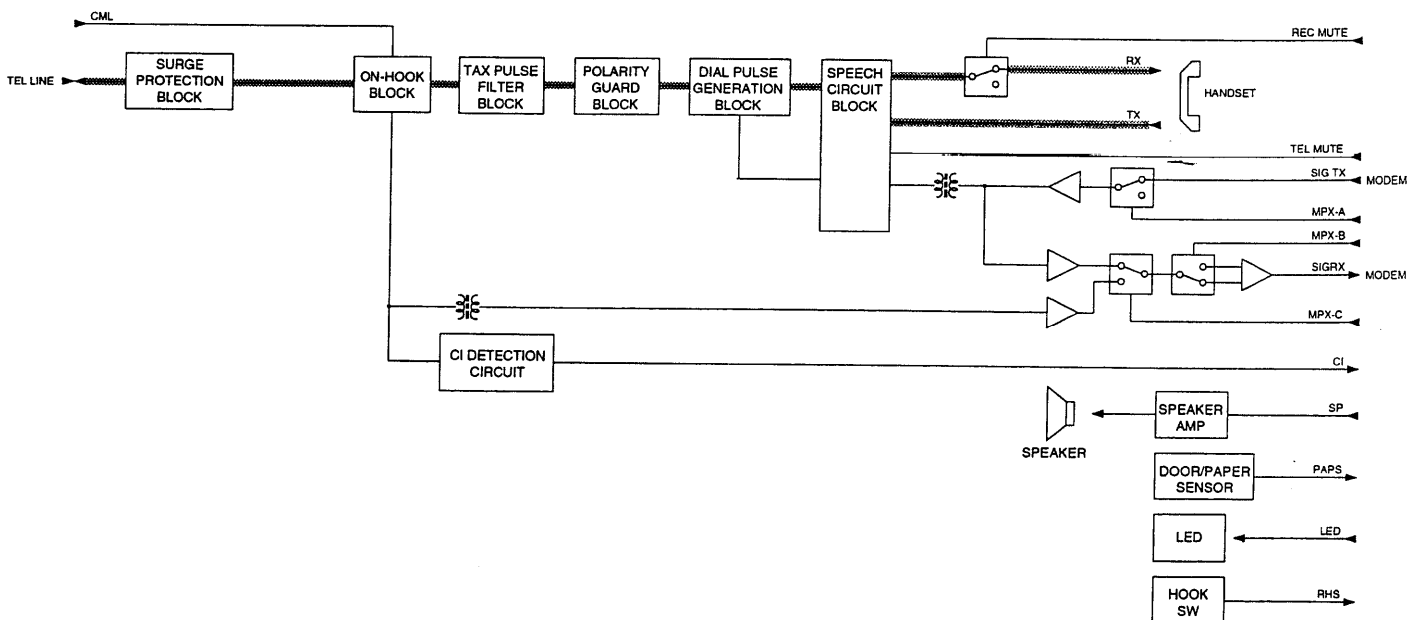
This block is composed of PSNS (photo interrupter), and is used to sense the presence of recording paper and the cover open/close of the cover.

10. Signal selection

The following signals are used to control the transmission line of TEL/FAX signal.

- TEL MUTE: Controls the mute of handset voice transmission signal.
- REC MUTE: Controls the mute of handset voice reception signal.
- SP-MUTE: Controls the mute of speaker amplifier.
- MPX A: Mutes the transmission drive amplifier.
H: Selected when the FAX signal is being received
L: Selected when the telephone is being used or when the FAX signal is being transmitted
- MPX B: Switches over the gain of reception amplifier.
H: Amplifier gain decreased
L: Amplifier gain increased
- MPX C:
H: Receive signal to modem
L: External remote

Signal flow when TEL speaking



[4] Circuit description of power supply PWB

1. Block diagram

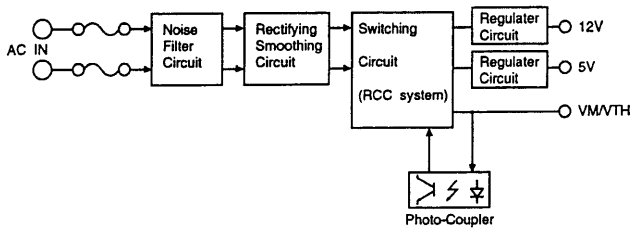


Fig. 1. Block diagram

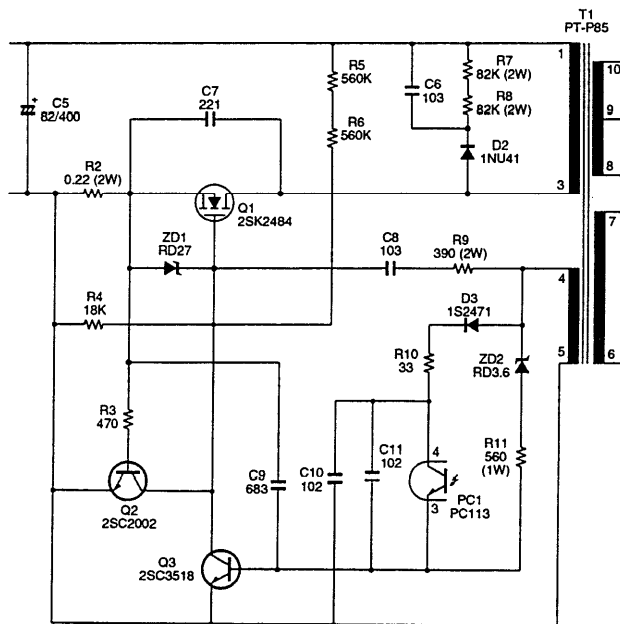
2. General description

The input voltage is 187V AC - 276V AC conforming to UL standards. The outputs are +24V(VM), +5V, +12V. The overvoltage protection function for protection of the load in case of power abnormality and the overcurrent protection function for protection of the power supply itself from overload are added.

3. Operational description

When 230-240 V/AC power is supplied, it is passed through a noise filter to the rectifier section where it is smoothed to about 300V then supplied to the inverter section. The inverter section employs one-transistor ON/OFF self-excited inverter (R.C.C. system) and a stable DC voltage is supplied to the secondary side. The operation of each section is described below:

3.1. Inverter section



When the voltage across R4 reaches the gate ON voltage through R5, R6, and R4, Q1 begins to turn ON, flowing a current from pin1 of T1 primary winding to pin3. Then a voltage is generated from pin5 of auxiliary winding to pin4, turning Q1 gate ON completely. The drain current increases linearly to store energy in the primary winding. However, voltage across R3 turns ON Q2 through R9 when the drain current reaches a certain level. As a result, Q1 gate voltage falls below the threshold voltage (about 4V) of the gate and Q1 turns off. Simultaneously when Q1 turns off, the energy stored in the primary winding is induced in the secondary winding to bias the rectifier diodes D4, D5, and D6 forwardly, smoothing each output capacitor. Thus a DC voltage is obtained.

3.2. Control section

(1) +24V (VM) control

A voltage is generated in the secondary side by repeated operations of 3.1, and the output in the secondary side is divided by R14, VR1, and R15 to be inputted to Q4. The divided voltage is adjusted to about 6.2V by VR1. Q4 always monitors the divided output voltage. When the output voltage exceeds +24V, the divided voltage also exceeds 6.2V and Q4 judges it as an increase in the output voltage. Then photocoupler PC1 is lit through R13 to turn on the transistor in the light receiving side, supplying a current to the base of Q3, turning off Q1. (The current which is to be passed through the additional line, R8, and C8 to R4 is bypassed by Q3). Resultantly, ON time of Q1 is shortened and the energy stored in the primary winding is decreased, limiting the increase in the output voltage. When the output voltage begins to decrease, the light quantity of PC1 is decreased to lengthen the ON time to Q1. As a result the energy in the primary winding is increased to compensate for the decrease in the output voltage.

The negative feedback control is repeated to stabilize the output voltage.

(2) +5V, +12V control

The outputs of +5V and +12V are stabilized by the three-terminal regulator ICs (IC1 and IC2). The overcurrent protection function protects the regulator ICs themselves.

(3) Noise Filter Circuit

The input noise filter section is composed of L and C, which reduces normal mode noise and common mode noise.

(4) Rectifying/Smoothing Circuit

The AC input voltage is rectified by diode D1 and smoothed by capacitor C5 to supply DC voltage to the switching circuit section. Power thermistor TH1 suppresses inrush current at power switch-on.

(5) Switching Circuit

The system applied in this circuit is the self excited ringing choke converter (RCC). In this system, the DC voltage supplied from the rectifying/smoothing section is converted into high frequency pulses by ON/OFF repetition of MOS FET Q1. Energy is charged in the transformer T1 during ON period of Q1, and discharged to the secondary circuit during OFF period. The output voltage is controlled by automatic adjustment of ON period of Q1. The ON period is determined by C9 charge time changed according to 24V output through operation of photo-coupler PC1. The overcurrent protection is performed by driving Q1 to OFF state through detection of voltage increase in the auxiliary winding of T1 by ZD2 and R11. The overvoltage protection is performed by operating the overcurrent protection circuit through destruction of zener diode ZD3.

(6) +5V, +12V Circuit

Each DC voltage supplied by rectifying the output of transformer T1 with diode D4 or D5 is stabilized by 3-terminal regulator IC1 or IC2.

3.3. Overcurrent protection function

When the output current in the secondary side increases to become an overcurrent or short R2/R4 detects the drain current to turn on Q2. The gate voltage of Q1 is controlled to shorten ON time of Q1 to protect the circuit from the overcurrent.

3.4. Overvoltage protection function

When the output voltage is abnormally increased and ZD3 zener voltage exceeds about 30V, ZD3 is shorted to operate the same procedure as the overcurrent protection function. To reset, turn off the AC switch, remove the cause, and replace ZD3 with a new one.

3.5. High temperature protection circuit

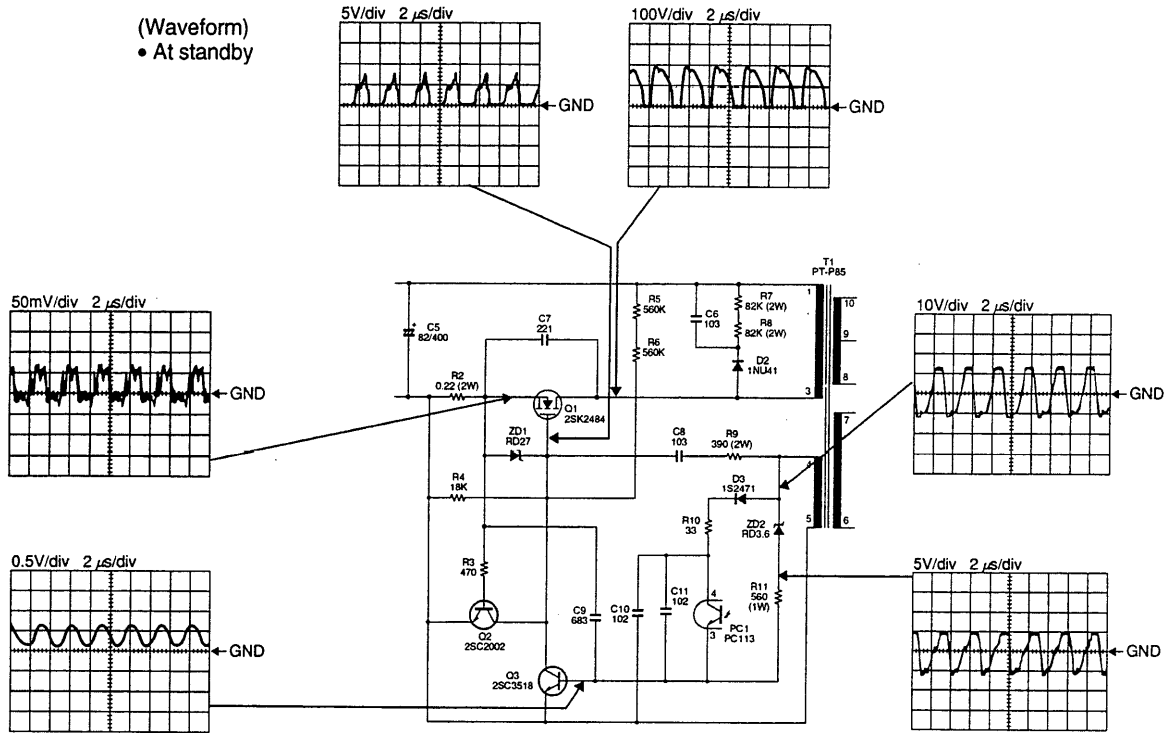
Thermal fuse F3 included in the power circuit is blown when the surface temperature of rectifier D1 exceeds about 115 degrees Centigrade. (about 239°F)

3.6 Rush current limiting circuit

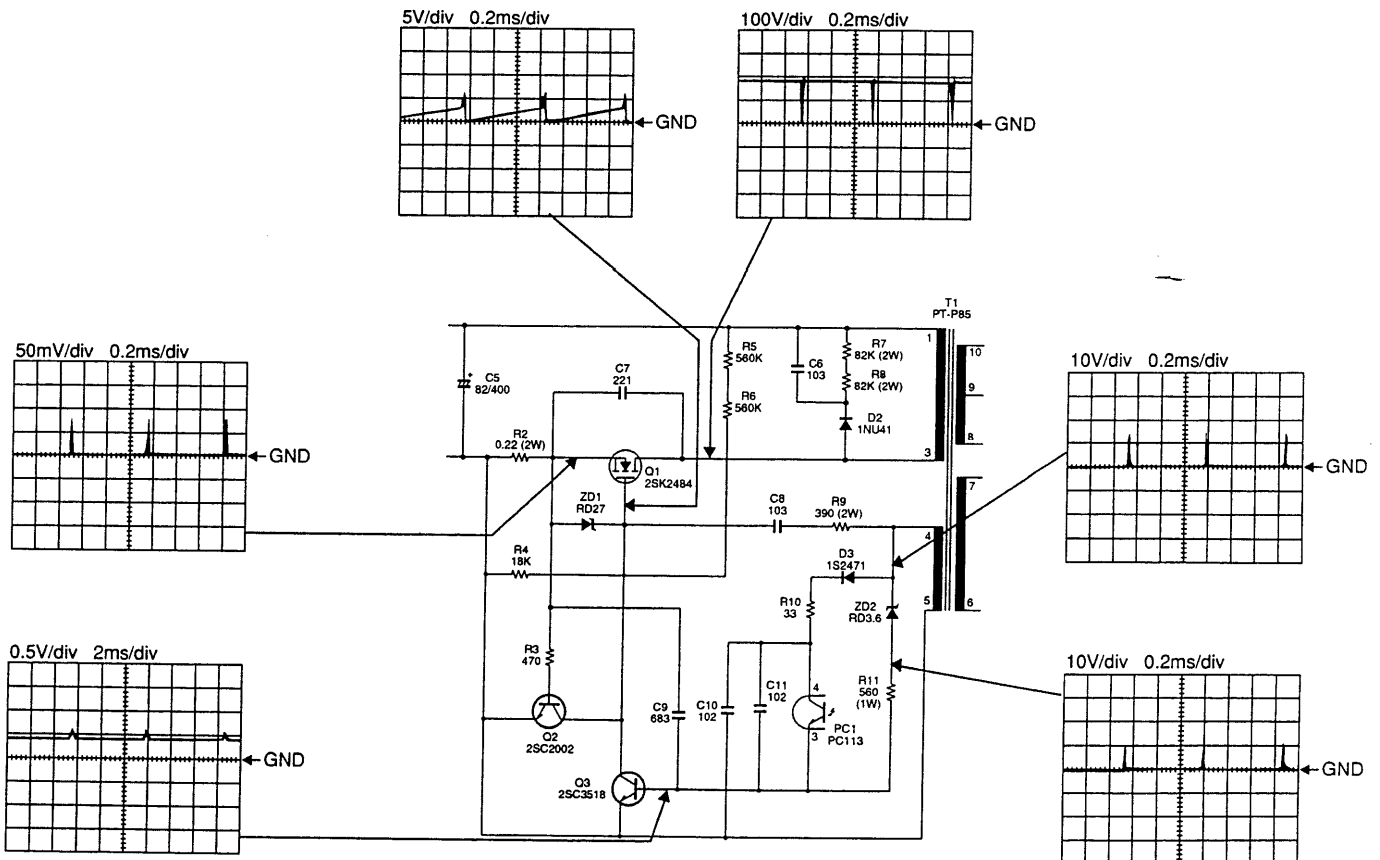
When AC power is supplied, a rush current flowing through capacitor C5 may blow fuse F1 and damage the circuit. To prevent this, the power thermistor TH1 is provided to limit the rush current.

3.7. Line filter

To protect against external noises and noises generated in the power circuit, the line filter is composed of L1, L2, C1, C2, C3, and C4 to reduce noises.



• When the overcurrent protection circuit works



[5] Circuit description of CCD PWB

The CCD board picks up optical information from the document, converts it into an electrical (analog) signal and transfers it to the control board.

(1) Block diagram

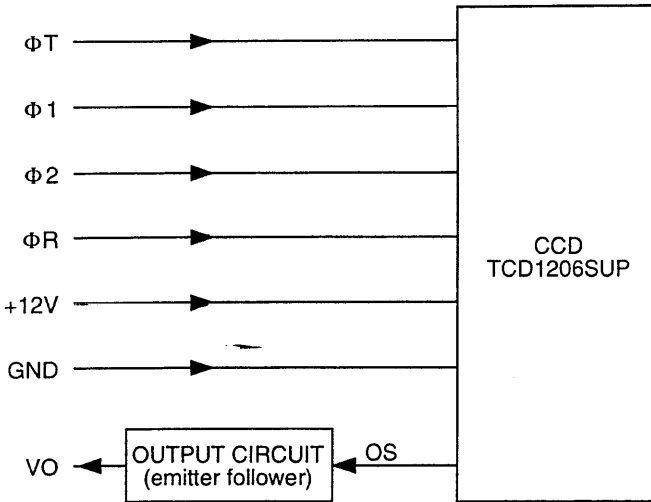


Fig. 8

(2) Description of blocks

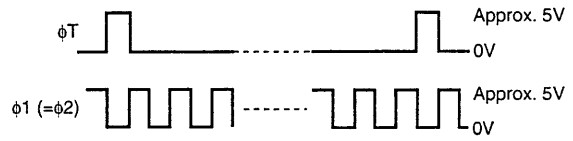
1. CCD

The TCD1200SUP is a highly sensitive charged coupled image sensor that consists of 2160 picture elements.

Receiving four drive signal (ϕT , $\phi 2$, $\phi 1$, ϕR) from the control board, the transferred photoelectric analog signal OS is impedance converted, and the signal VO, is supplied to the control board.

2. Waveforms

1. $\phi 1$, $\phi 2$ ($=\overline{\phi 1}$) signals within the control board.



2. OS ϕ

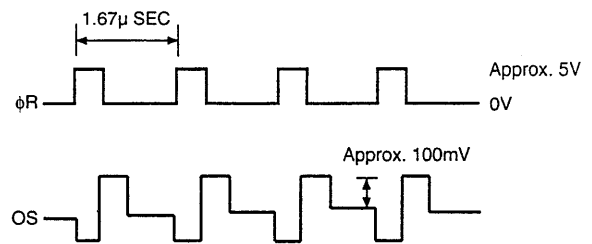
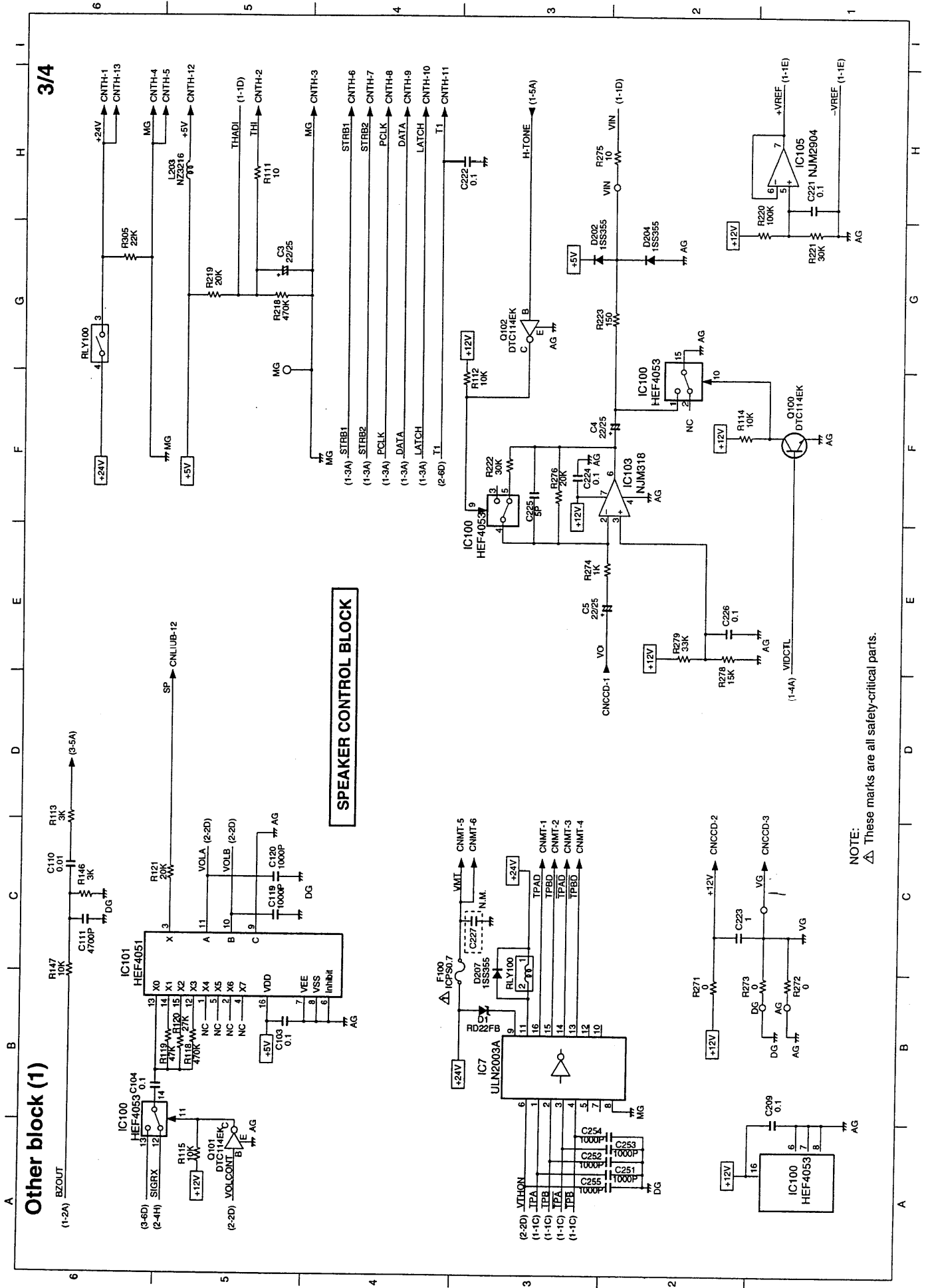
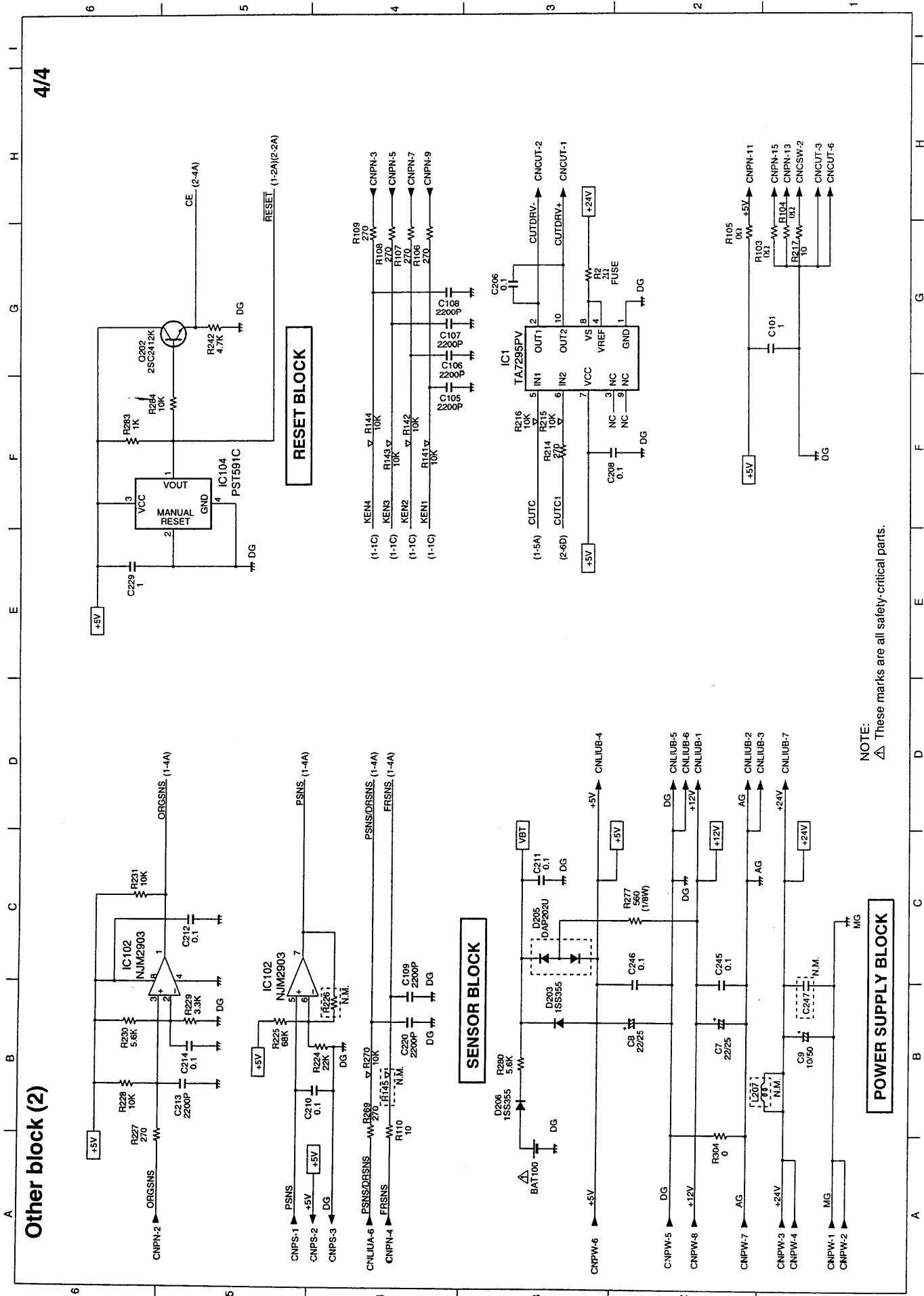


Fig. 9



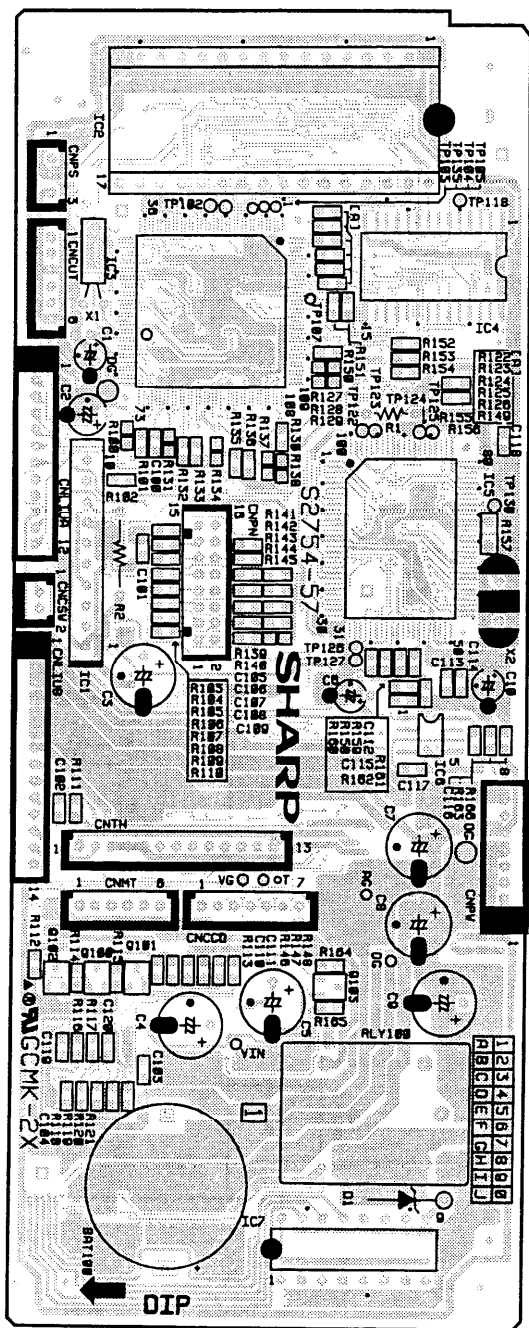
SPEAKER CONTROL BLOCK

NOTE:
△ These marks are all safety-critical parts.

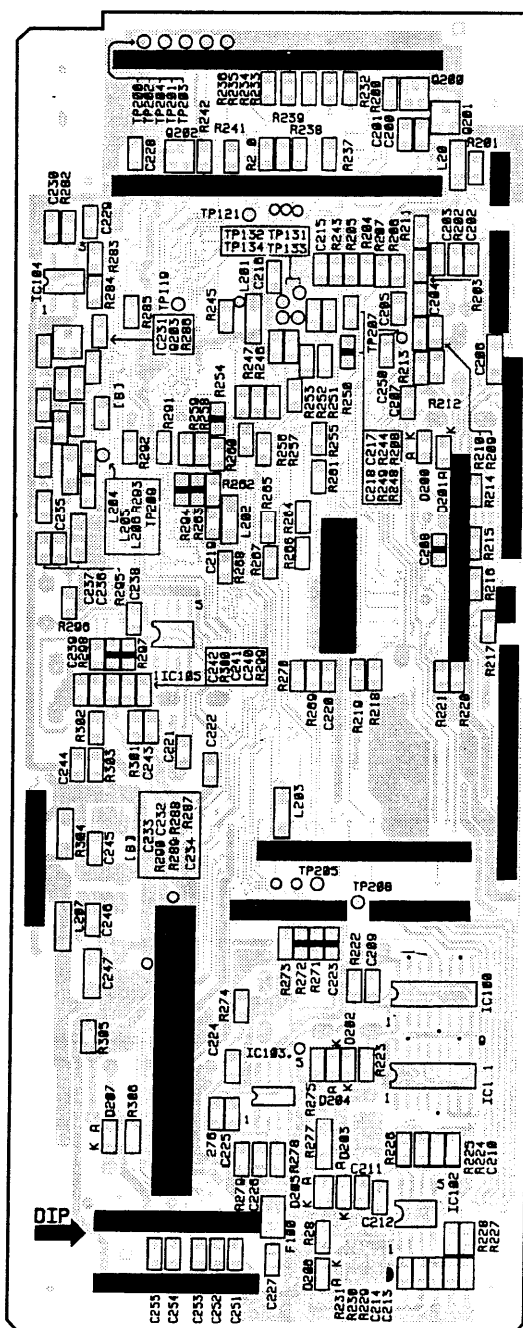


NOTE: Δ These marks are all safety-critical parts.

Control PWB parts layout
(Top side)

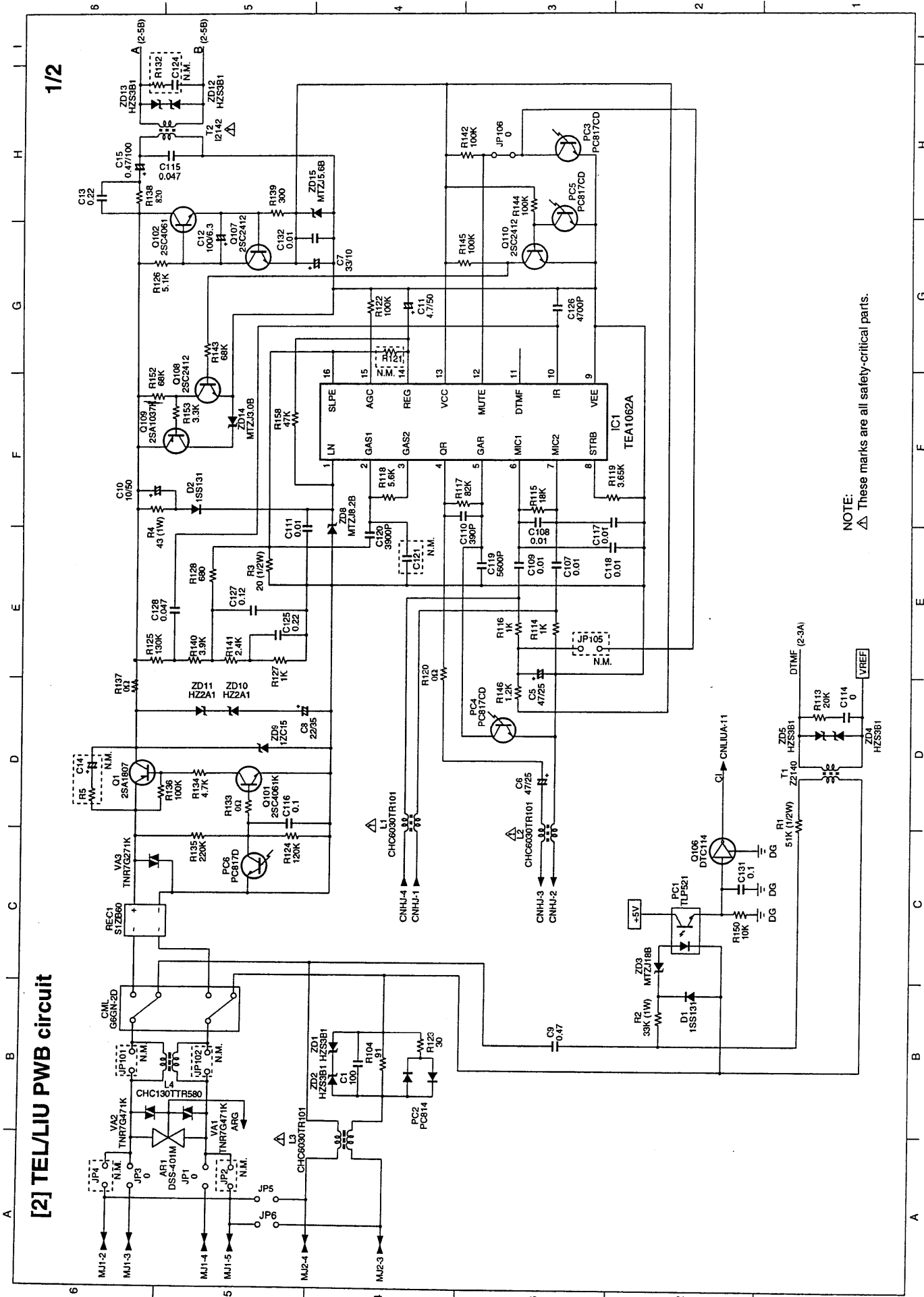


Control PWB parts layout
(Bottom side)



[2] TEL/LIU PWB circuit

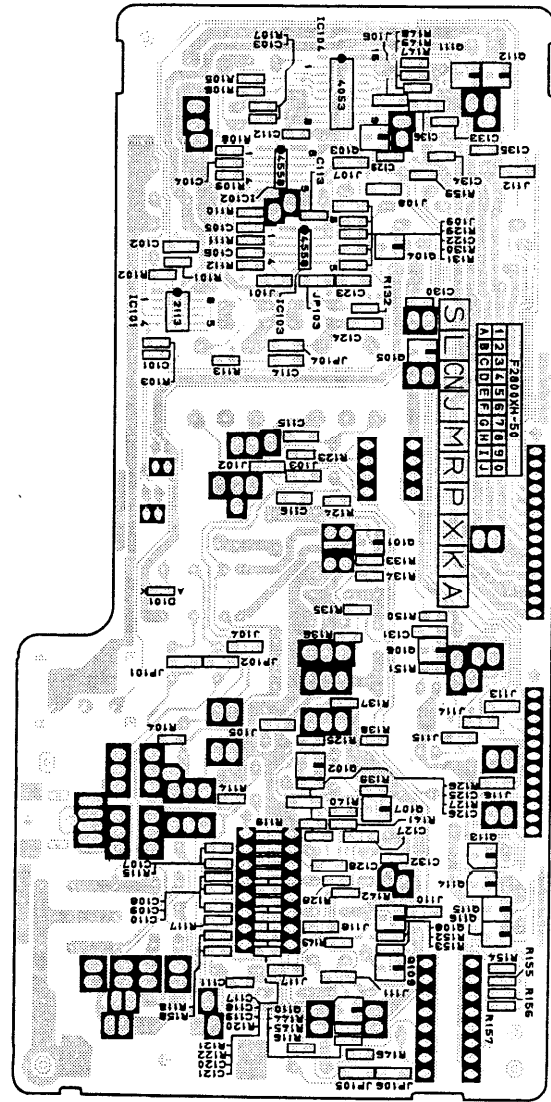
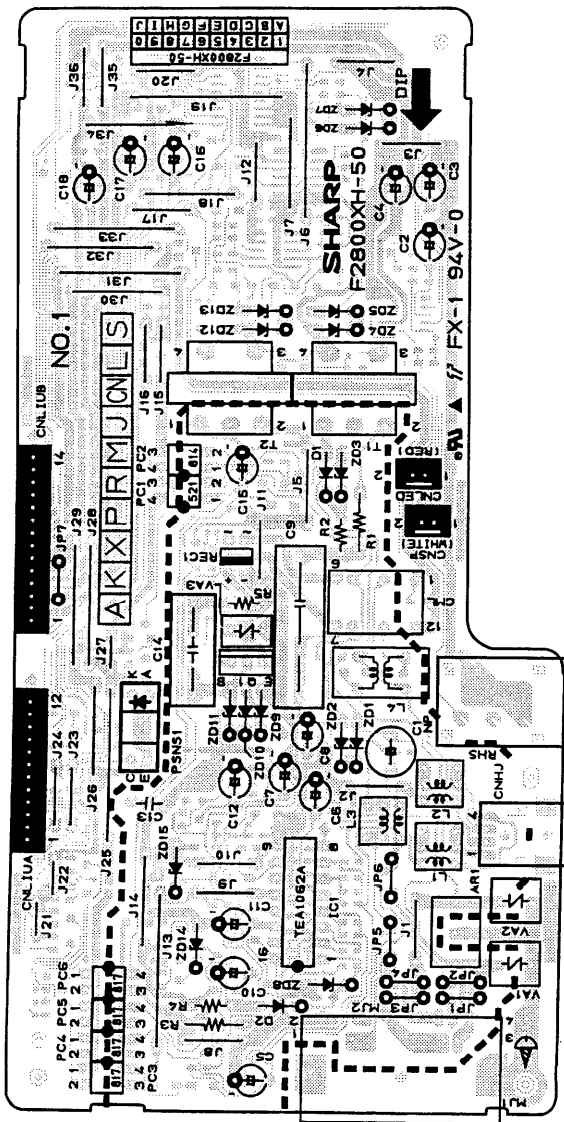
1/2



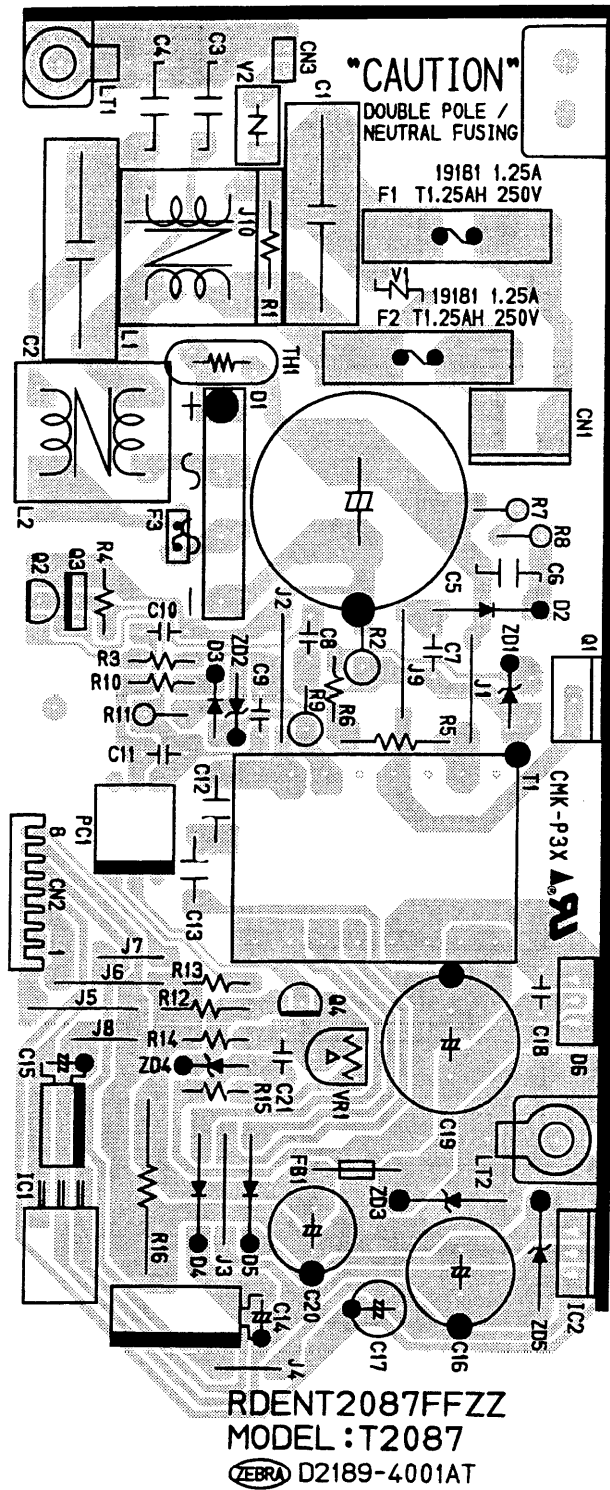
NOTE: Δ These marks are all safety-critical parts.

TEL/LIU PWB parts layout (Top side)

TEL/LIU PWB parts layout (Bottom side)

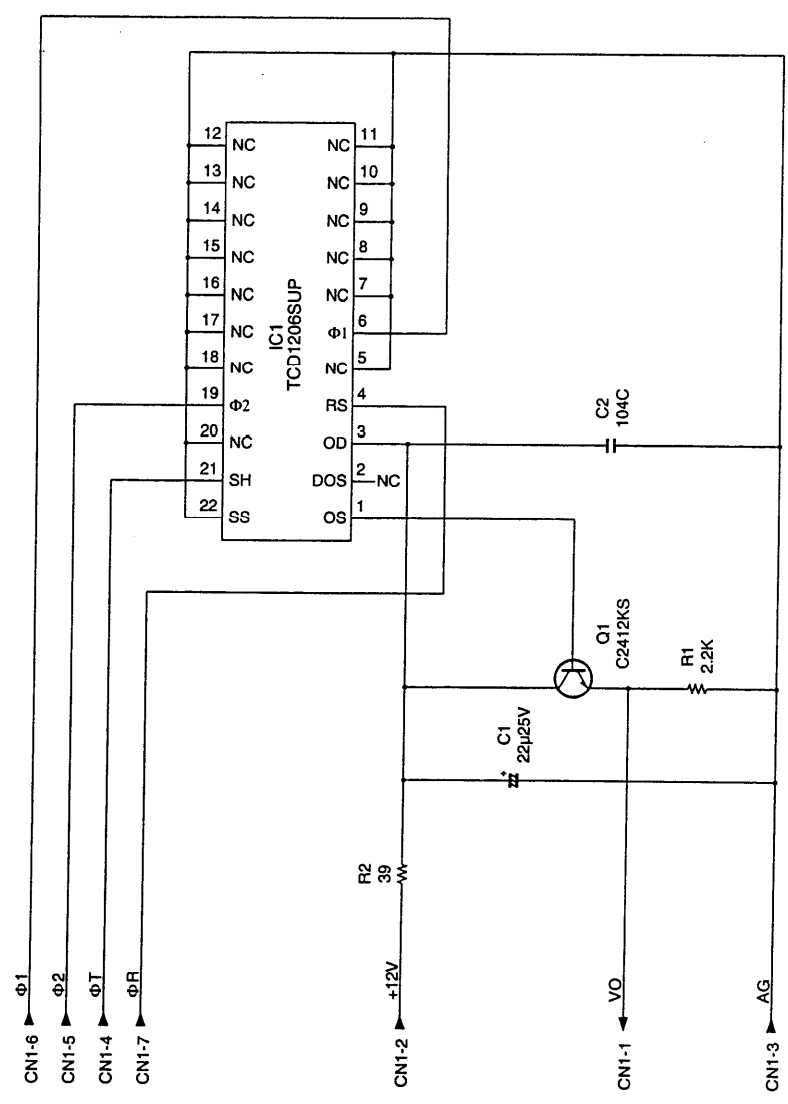


Power supply PWB parts layout



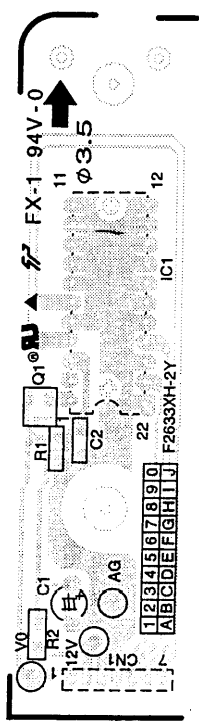
1/1

[4] CCD PWB circuit

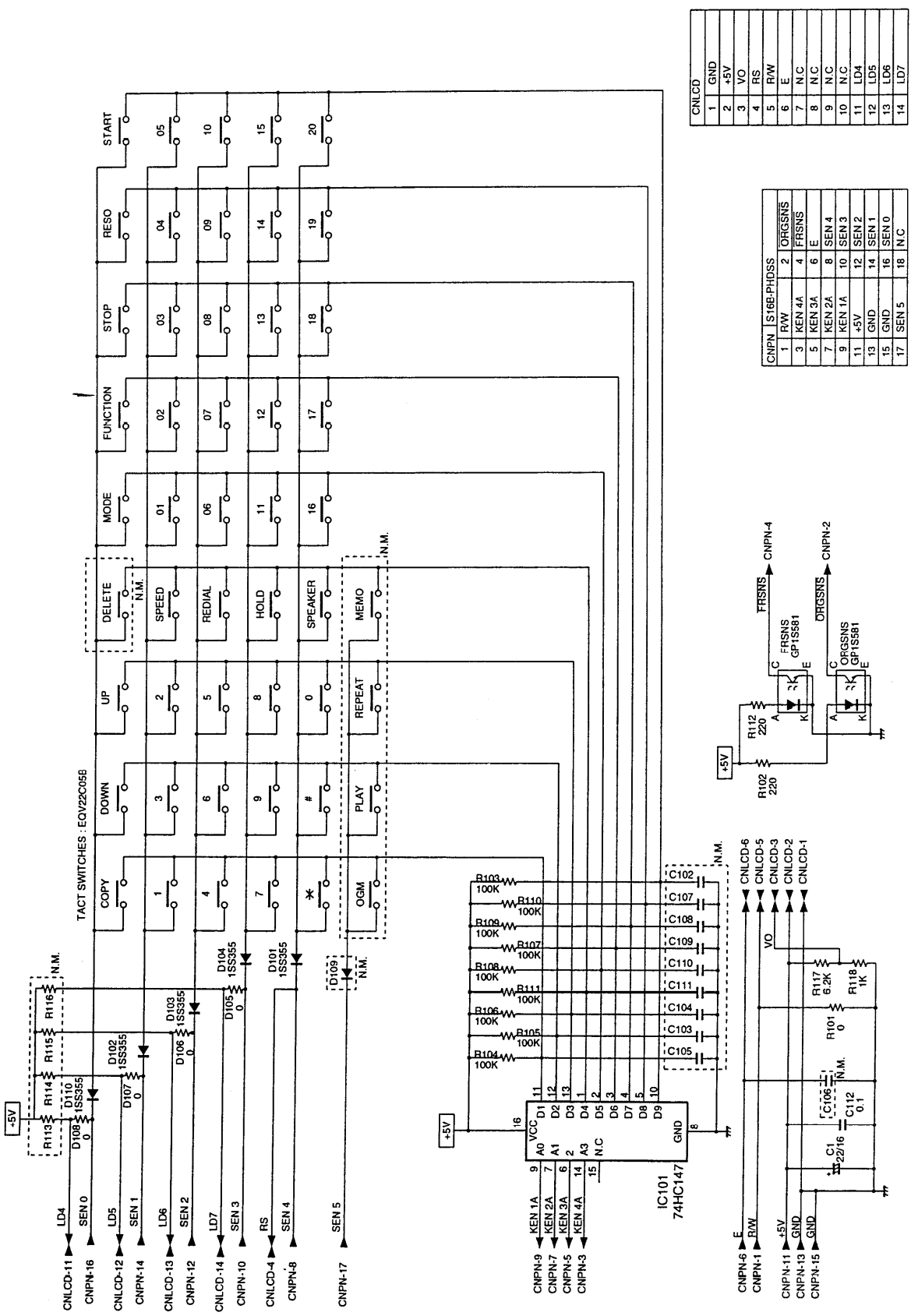


CN1	
1	VO
2	+12V
3	AG
4	φT
5	φ2
6	φ1
7	φR

CCD PWB parts layout

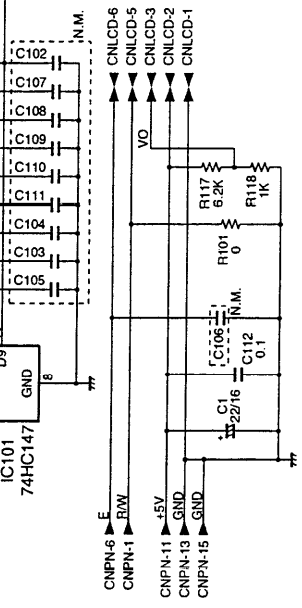
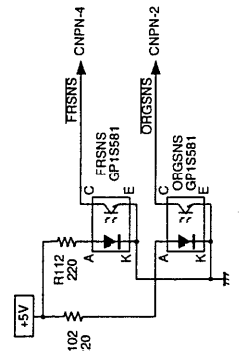


[5] Operation panel PWB circuit

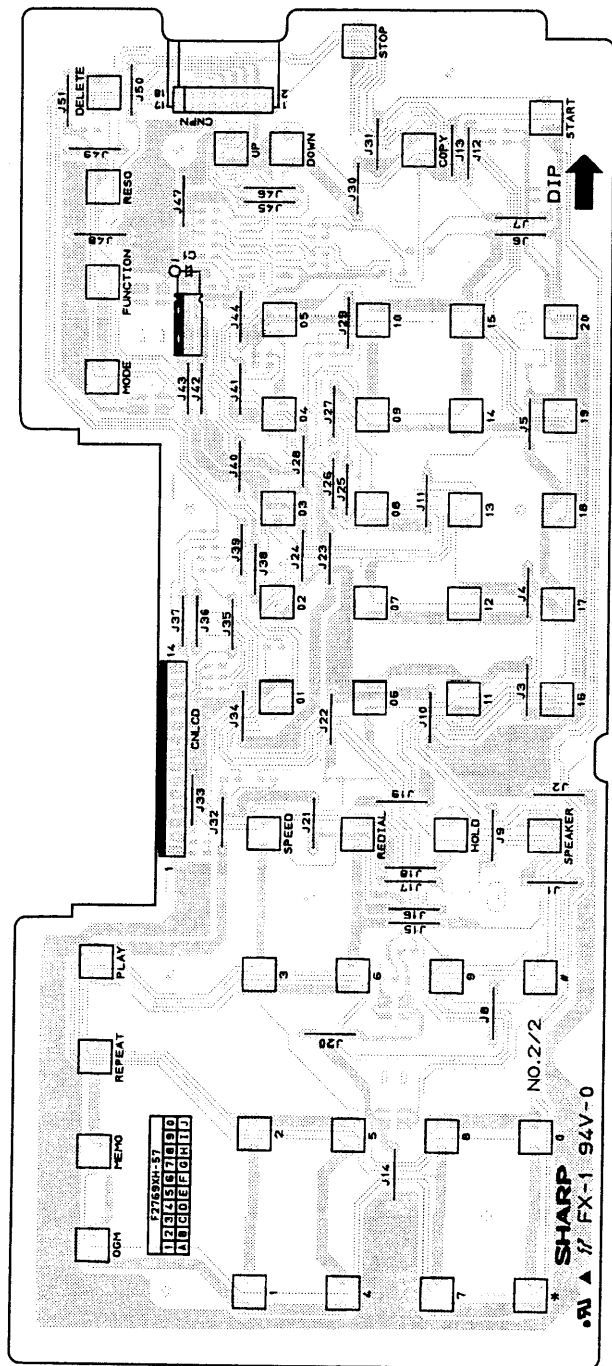


CNLCD	
1	GND
2	+5V
3	VO
4	RS
5	R/W
6	E
7	N/C
8	N/C
9	N/C
10	N/C
11	LD5
12	LD4
13	LD6
14	LD7

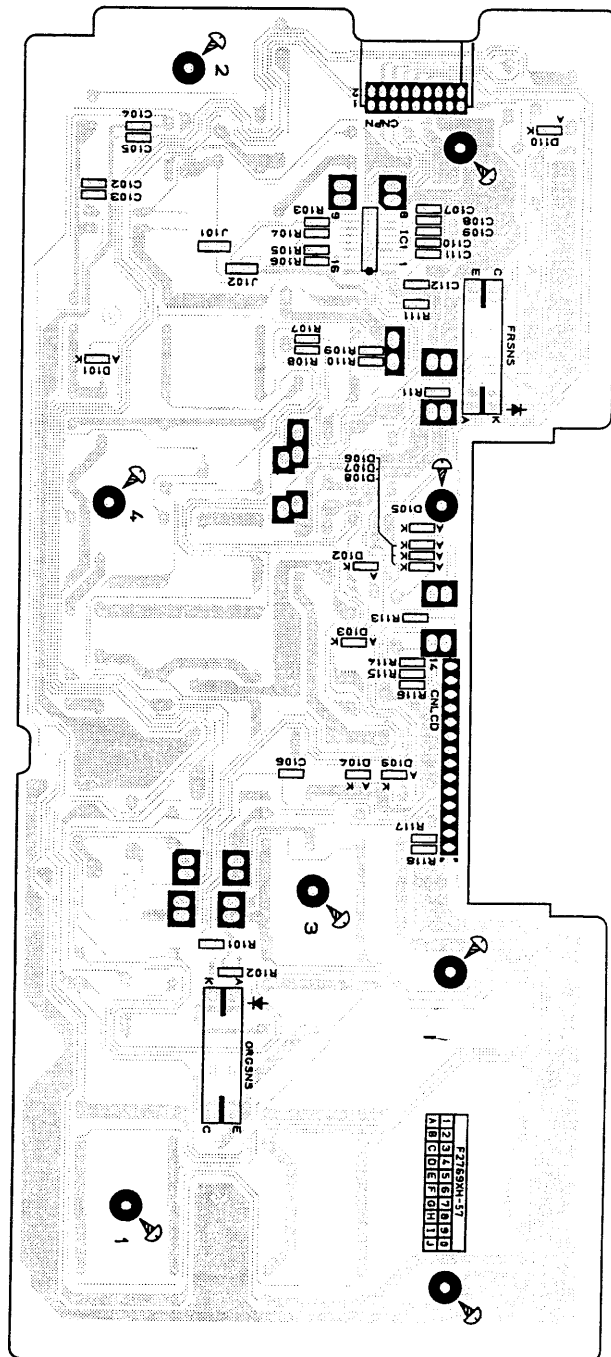
CNPN 1S16B-PH05S	
1	R/W
2	FRS/S
3	KEN 4A
4	FRS/S
5	KEN 3A
6	E
7	KEN 2A
8	SEN 4
9	KEN 1A
10	SEN 3
11	+5V
12	SEN 2
13	GND
14	SEN 1
15	GND
16	SEN 0
17	SEN 5
18	N/C



Operation panel PWB parts layout
(Top side)

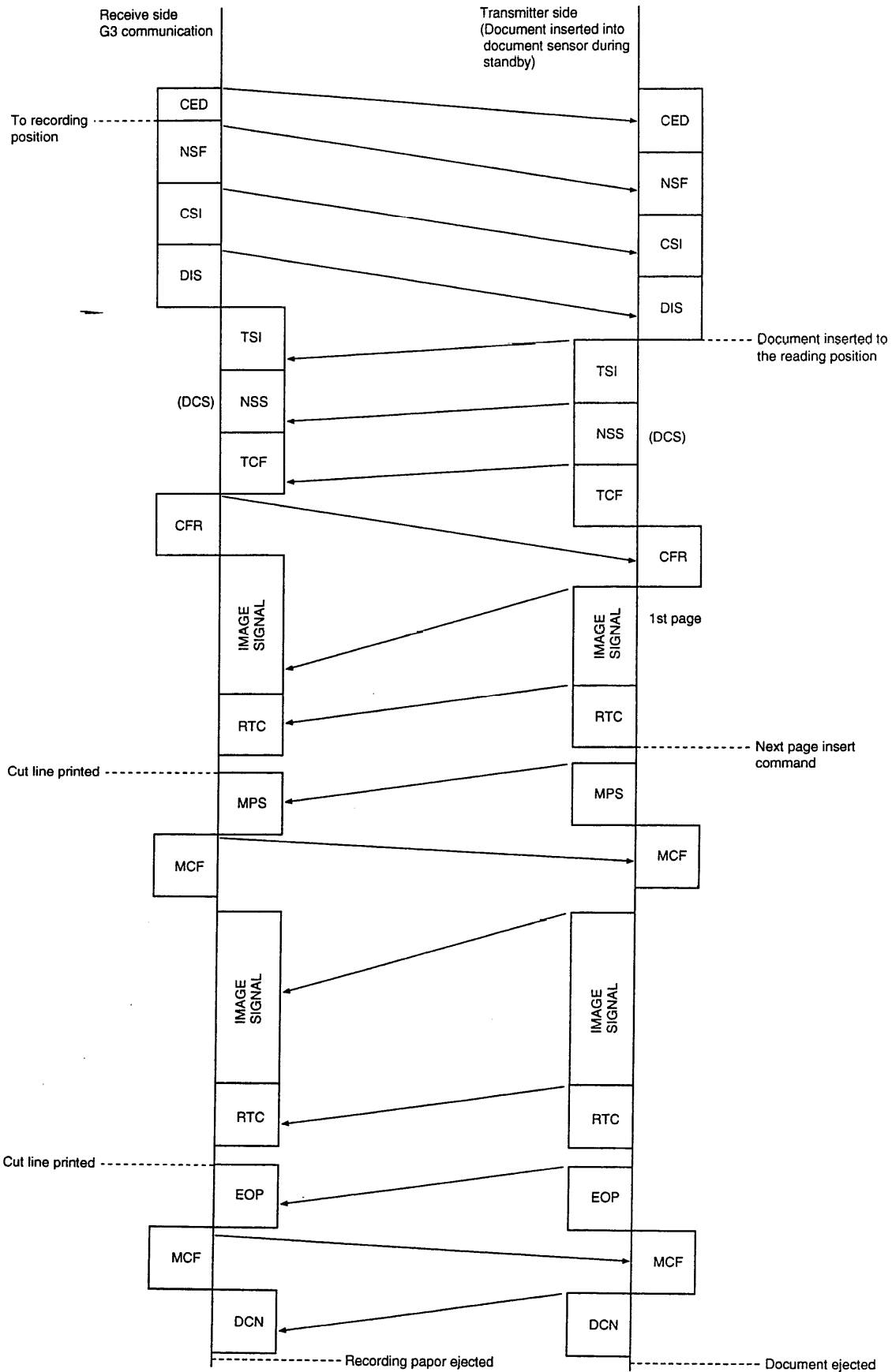


Operation panel PWB parts layout
(Bottom side)

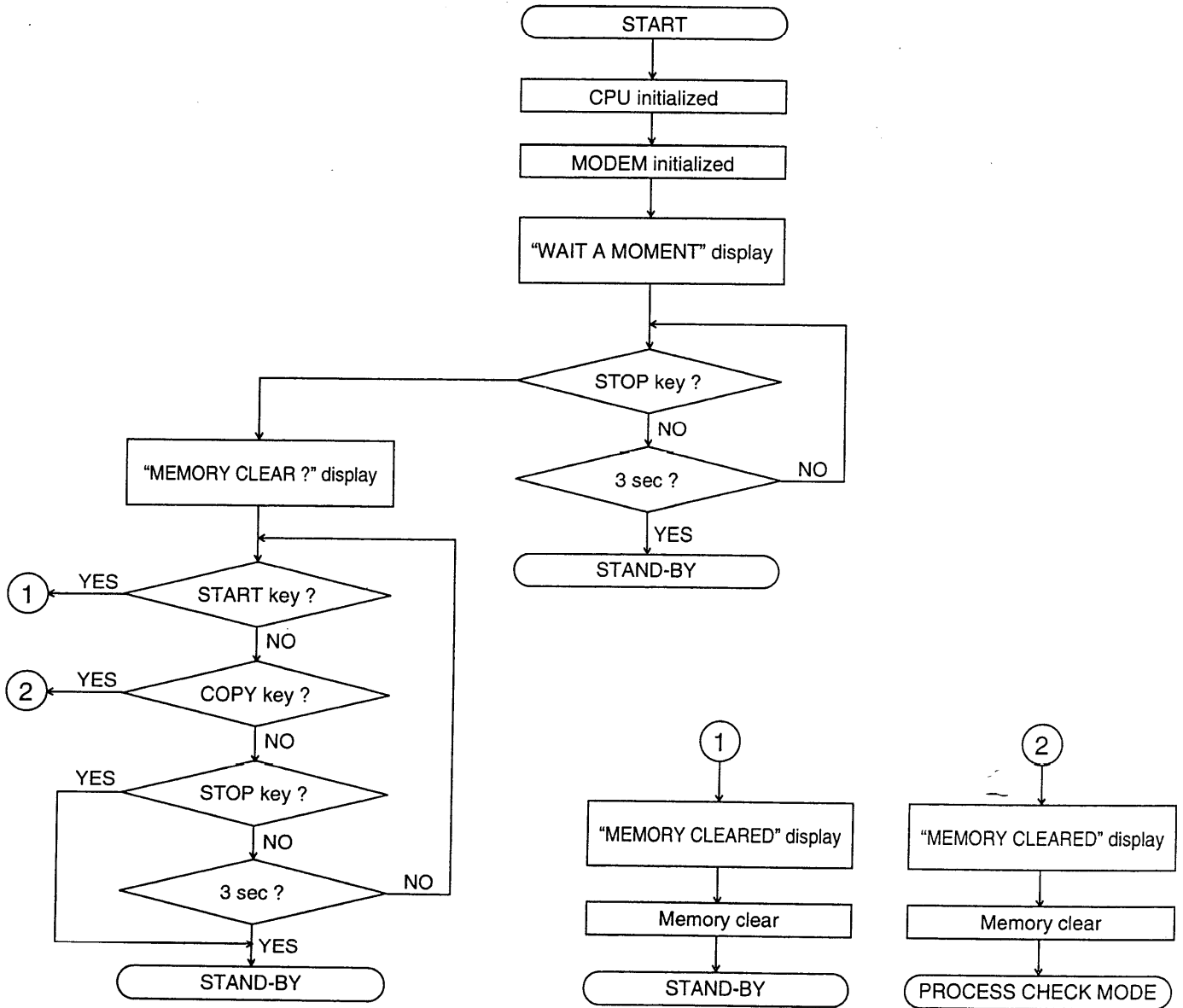


CHAPTER 7. OPERATION FLOWCHART

[1] Protocol



[2] Power on sequence



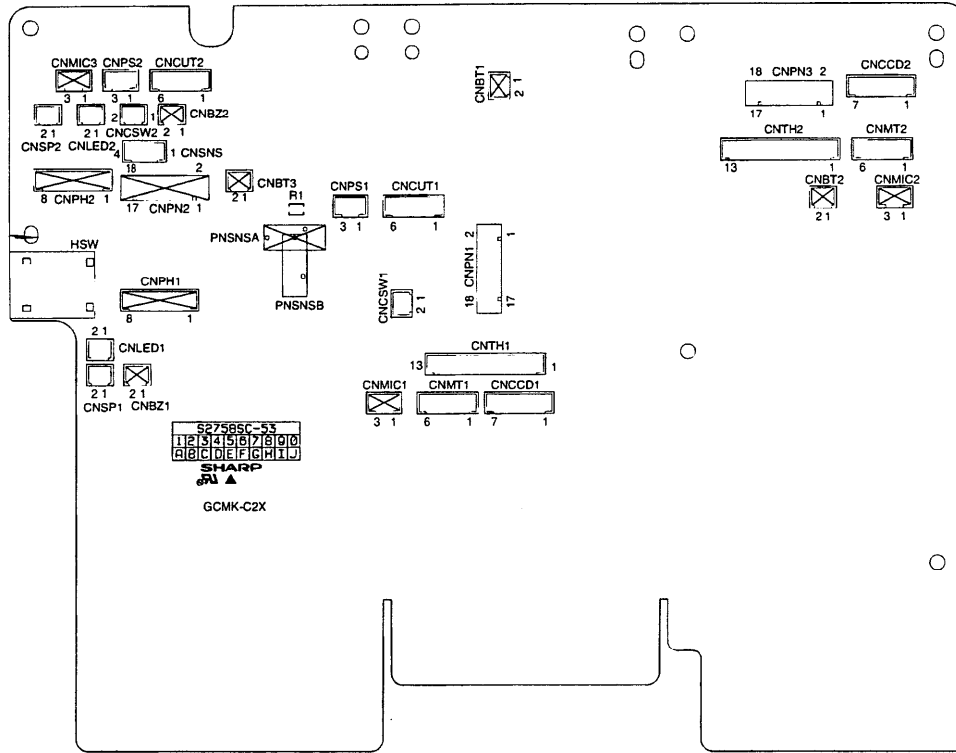
CHAPTER 8. OTHERS

[1] Service tools

1. List

NO.	PARTS CODE	DESCRIPTION	Q'TY	PRICE RANK
1	CPWBS2758SC02	Extension board unit	1	BX
2	UKOGM2028SCZZ	Optical adjustment jig	1	BE

Extension board unit

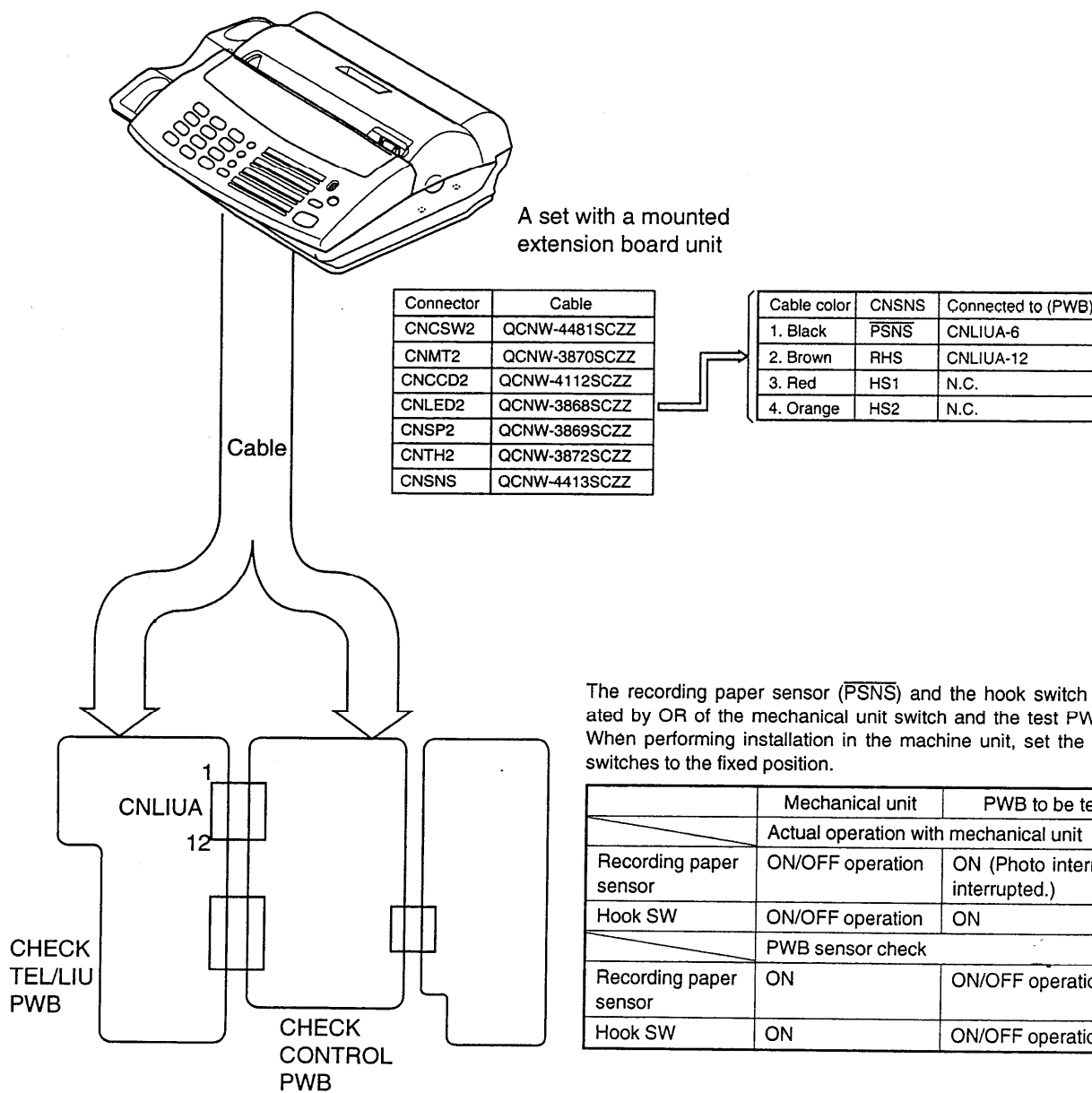


NO.	PARTS CODE	DESCRIPTION	Q'TY	PRICE RANK
1	QC NW-3872SCZZ	CABLE (CNTH2)	1	AP
2	QC NW-4413SCZZ	CABLE (CNSNS)	1	AX
3	QC NW-4481SCZZ	CABLE (CNCSW2)	1	AG
4	QC NW-3868SCZZ	CABLE (CNLED2)	1	AE
5	QC NW-3870SCZZ	CABLE (CNMT2)	1	AH
6	QC NW-3882SCZZ	CABLE (CNPS2)	1	AF
7	QC NW-4411SCZZ	CABLE (CNCUT2)	1	AH
8	QC NW-4112SCZZ	CABLE (CNCCD2)	1	AG
9	QC NW-3869SCZZ	CABLE (CNSP2)	1	AE
10	QC NCM7014SC0G	CONNECTOR (CNCCD1, CNCCD2)	2	AB
11	QC NCM7014SC0B	CONNECTOR (CNLED1, CNLED2)	4	AD
12	QC NCM2401SC0F	CONNECTOR (CNCUT1, CNCUT2)	2	AB
13	QC NCM7014SC0F	CONNECTOR (CNMT1, CNMT2)	2	AB
14	QC NCM2482SC1F	CONNECTOR (CNPN1, CNPN3)	2	AF
15	QC NCM7014SC0C	CONNECTOR (CNPS1, CNPS2)	2	AA
16	QC NCM7014SC0D	CONNECTOR (CNSNS)	1	AB
17	QC NCM2401SC0B	CONNECTOR (CNSP1, CNSP2)	2	AA
18	QC NCM7014SC1C	CONNECTOR (CNTH1, CNTH2)	2	AC
19	QSW-Z2206SCZZ	HOOK SWITCH (HSW)	1	AH
20	VHGP1S58V// -1	(PNSNS)	1	AE
21	QPWBS2758SCZZ	EXTENSION BOARD (WITHOUT PARTS)	1	-
22	VRD-RC2EY221J	RESISTOR (1/4W 220Ω ±5%) (R1)	1	AA
23	QC NCM2442SC0B	CONNECTOR (CNCSW1, CNCSW2)	2	AB
24	QC NW-4236SCZZ	CABLE (CNMIC2)	1	AE
25	QC NCM2401SC0C	CONNECTOR (CNMIC1, CNMIC2)	1	AB

2. Description

2-1. Extension board unit

1. Remove the TEL/LIU PWB, control PWB and Power Supply PWB from this unit, and mount the extension board unit instead.
 - Before connecting the wiring to the extension board unit, set the test PWB switches to the fixed position.
2. The setting is as follows.



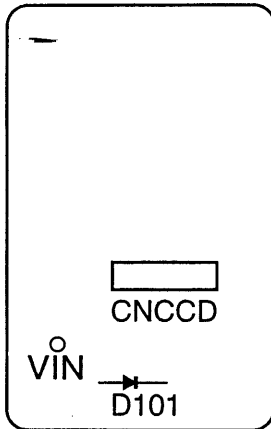
2-2. Scan optical system adjustment

(1) Outline

The adjustment procedures of the scan optical system are described below:

(2) Adjustment procedures

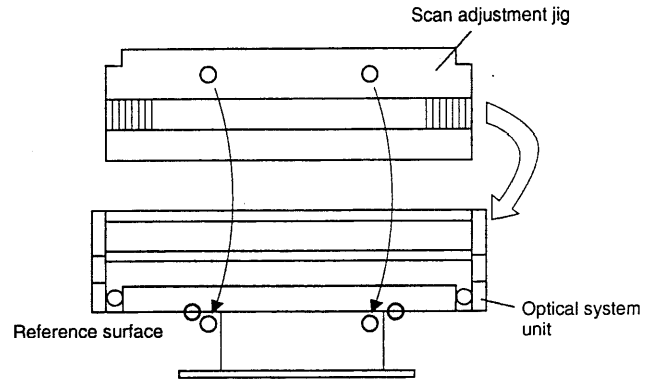
- ① Switch off the machine and disconnect the AC power cable from the wall socket.
- ② Fully open the upper cabinet, remove the fixing screws of the recording paper tray and remove the recording paper tray. In order to perform a focus adjustment, remove the optical system unit from the frame.
- ③ Disconnect the main pwb from the TEL/LIU pwb.
- ④ Connect your oscilloscope channel 1 to the VIN signal and channel 2 of your oscilloscope to ϕT signal (Refer Pin 4 of connector CNCCD on the main pwb). Connect the earth clips of either probe to AG ground as shown. Set the trigger to channel 2.



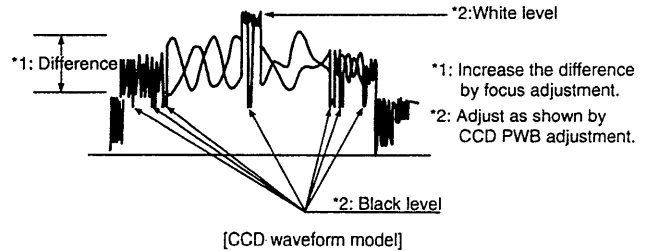
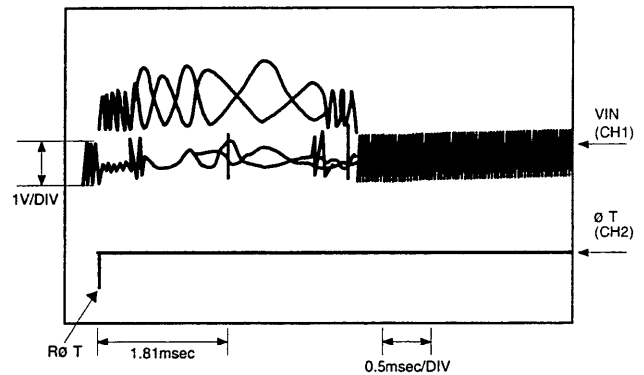
VID CNCCD-1
 ϕT CNCCD-4
VG CNCCD-3

- ⑤ Re-connect the main pwb to the TEL/LIU pwb and connect these circuit boards to the connectors on the chassis.
- ⑥ Re-assemble up to and including the recording paper tray to the main chassis and close upper cabinet.
- ⑦ Plug the AC power cable into the wall outlet and turn the fax machine on.
- ⑧ Insert a test chart in the document hopper and execute the CCD Adjust Mode diagnostic. Press the START key to enable local copy until approximately one fifth of the page has been copied, then press the STOP key to enable the CPU wait state.
- ⑨ Fully open the upper cabinet and remove the recording paper tray.
- ⑩ Install the scan adjustment jig to the optical system unit, so that the pattern surface is on the lower side.
- ⑪ Fit the pins of the scan adjustment jig to the holes of the optical system frame.

- ⑫ Lightly loosen the red screws of the CCD pwb and obtain the VID signal waveform in synchronization with ϕT signal waveform. Adjust the CCD pwb positioning to obtain the waveform as shown below.



CCD waveform



- ⑬ After completing the CCD adjustment, tighten the two red screws on the CCD pwb and apply screw locking material to prevent the CCD pwb from moving.
- ⑭ Assemble the recording paper tray and fixing screws.

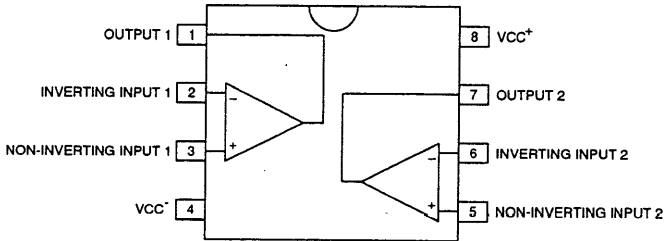
[2] IC signal name

CONTROL P.W.B. UNIT

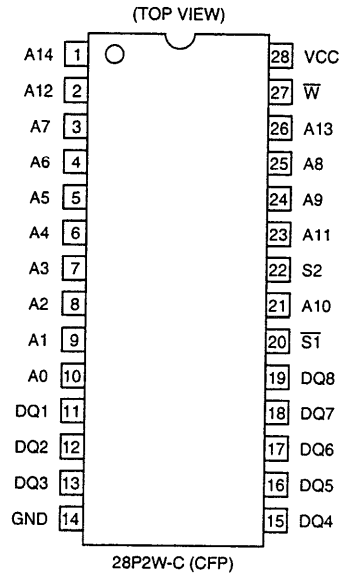
IC5: VHiR96SFELC-1 (R96DFXL)

Refer to the table on p. 5-7.

IC6: VHiNJM4558MF-(NJM4558M)

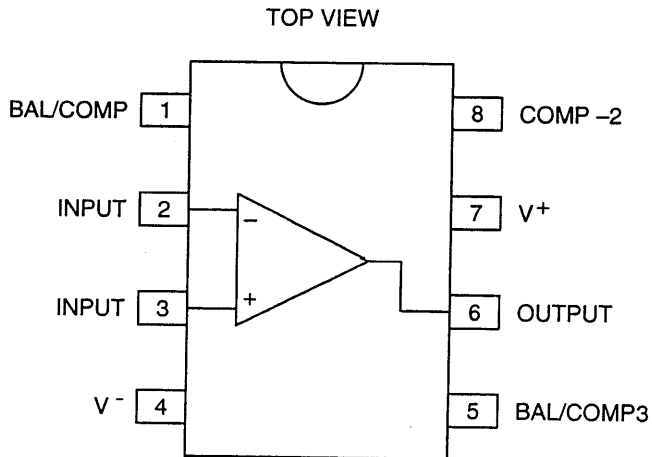


IC4: VHiM5255CF70L (M5M5255CFP)

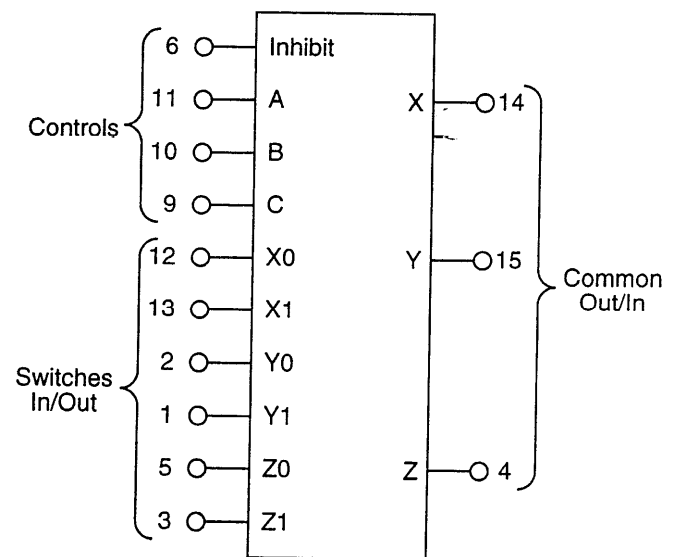


Pin name	Signal
A0-A12	Address input
CE1/CE2	Chip enable
WE	Write enable
OE	Write enable
I/O1-I/O8	Data I/O
VCC	Power source
GND	Ground
N.C.	No connection

IC103: VHiLM318M// -1 (LM318)



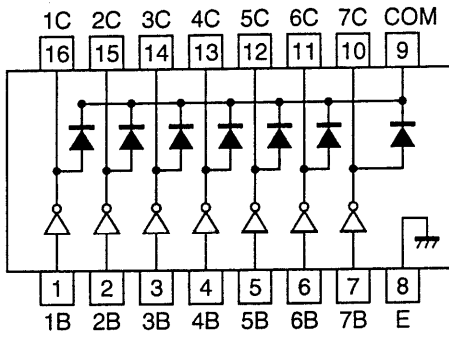
IC100: VHiBU4053BCF1 (BU4053BCF)



VDD: Pin 16
VSS: Pin 8
VEE: Pin 7

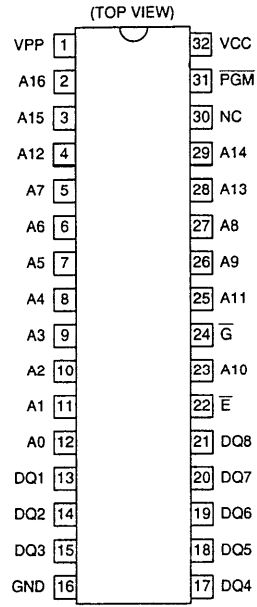
FO-155A
FO-355A

IC7: VHiULN2003ANS (ULN2003)



IC2: VHi27C01012TI (TMS27C010)

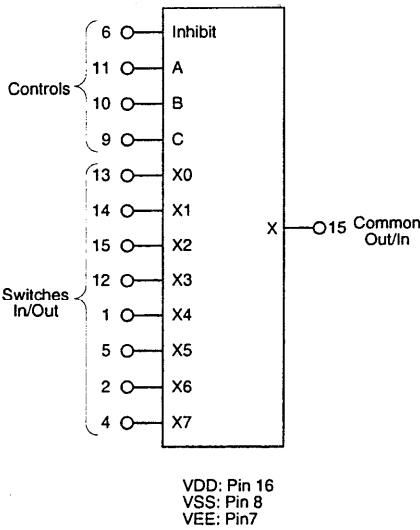
EP-ROM



Pin name	Signal
A0-A16	Address input
\bar{E}	Chip enable
\bar{G}	Output enable
GND	Ground
NC	No connection
PGM	Program
DQ1-DQ8	Data output (Program input)
VCC	+5V power
VPP	+12.5V power (*)

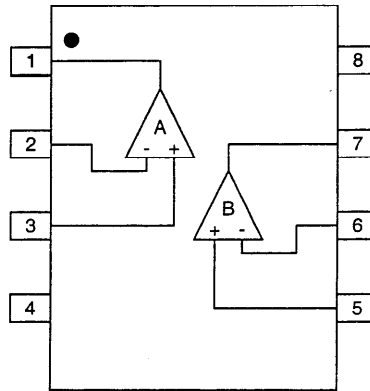
(*) Only in the program mode

IC101: VHiBU4051BCF1 (BU4051BCF)



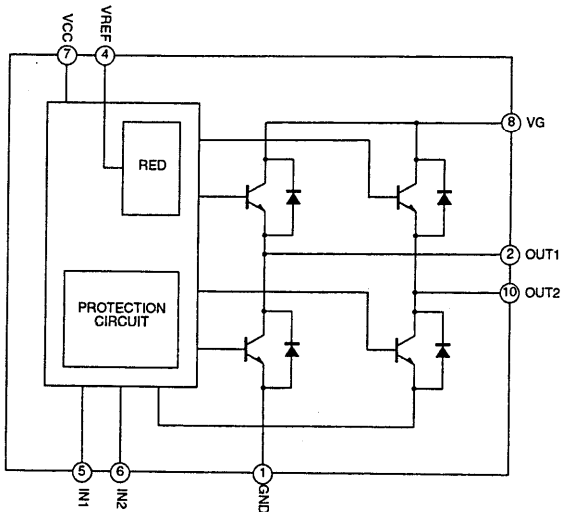
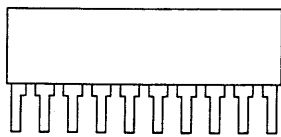
IC105: VHiLMT2904DR2 (LMT2904)

IC102: VHiLMT2903DR2 (LMT2903)

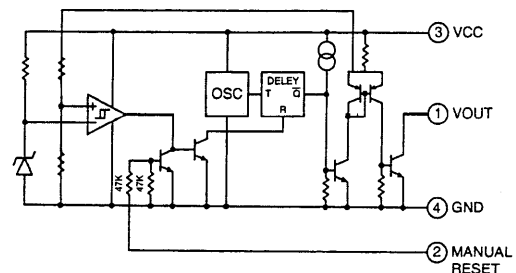
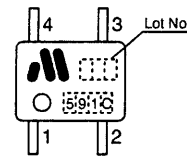


1. A OUTPUT
2. A- INPUT
3. A+ INPUT
4. V-
5. B+ INPUT
6. B- INPUT
7. B OUTPUT
8. V+

IC1: VHiTA7291PV-1 (TA7291P)

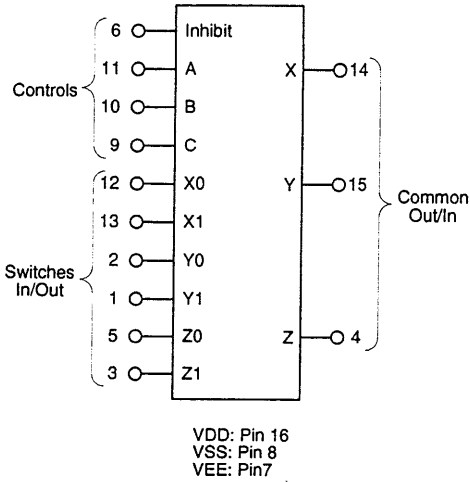


IC104: VHiPST591CMT1 (PST591C)



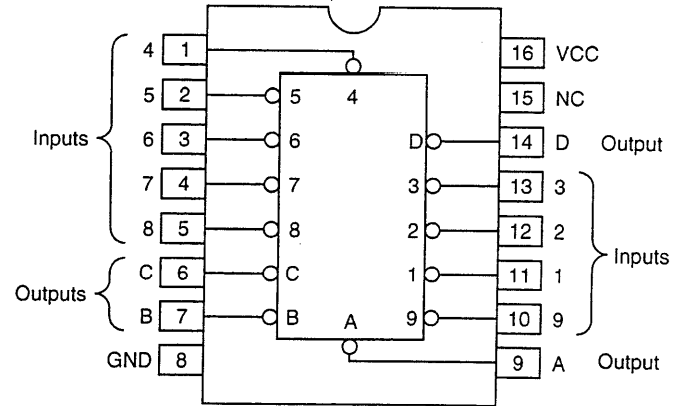
TEL/LIU P.W.B. UNIT

IC104: VHiBU4053DR2

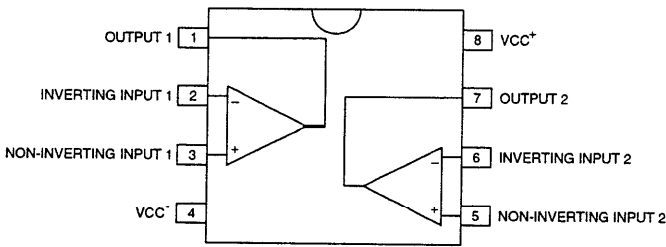


PANEL PWB UNIT

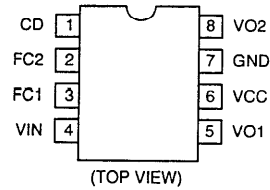
IC101: VHi74HC147/-1 (74HC147)



IC102, 103: VHiNJM4558MF-(NJM4558M)

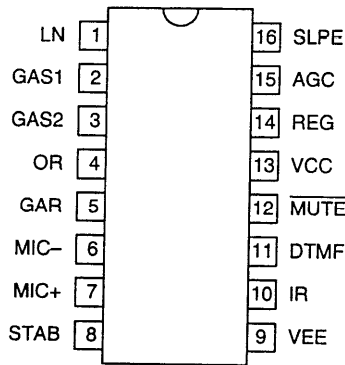


IC104: VHiNJM2113M-1 (NJM2113M)



IC1: VHiTEA1062A-1 (TEA1062A)

SYMBOL	PIN	DESCRIPTION
LN	1	Positive line terminal
GAS1	2	Gain adjustment: transmitting amplifier
GAS2	3	Gain adjustment: transmitting amplifier
OR	4	Non-inverting output: receiving amplifier
GAR	5	Gain adjustment: receiving amplifier
MIC-	6	Inverting microphone input
MIC+	7	Non-inverting microphone input
STAB	8	Current stabilizer
VEE	9	Negative line terminal
IR	10	Receiving amplifier input
DTMF	11	Dual-tone multi-frequency input
MUTE	12	Mute input
VCC	13	Positive supply decoupling
REG	14	Voltage regulator decoupling
AGC	15	Automatic gain control input
SLPE	16	Slope (DC resistance) adjustment



SHARP PARTS GUIDE

FO-155
MODEL FO-355

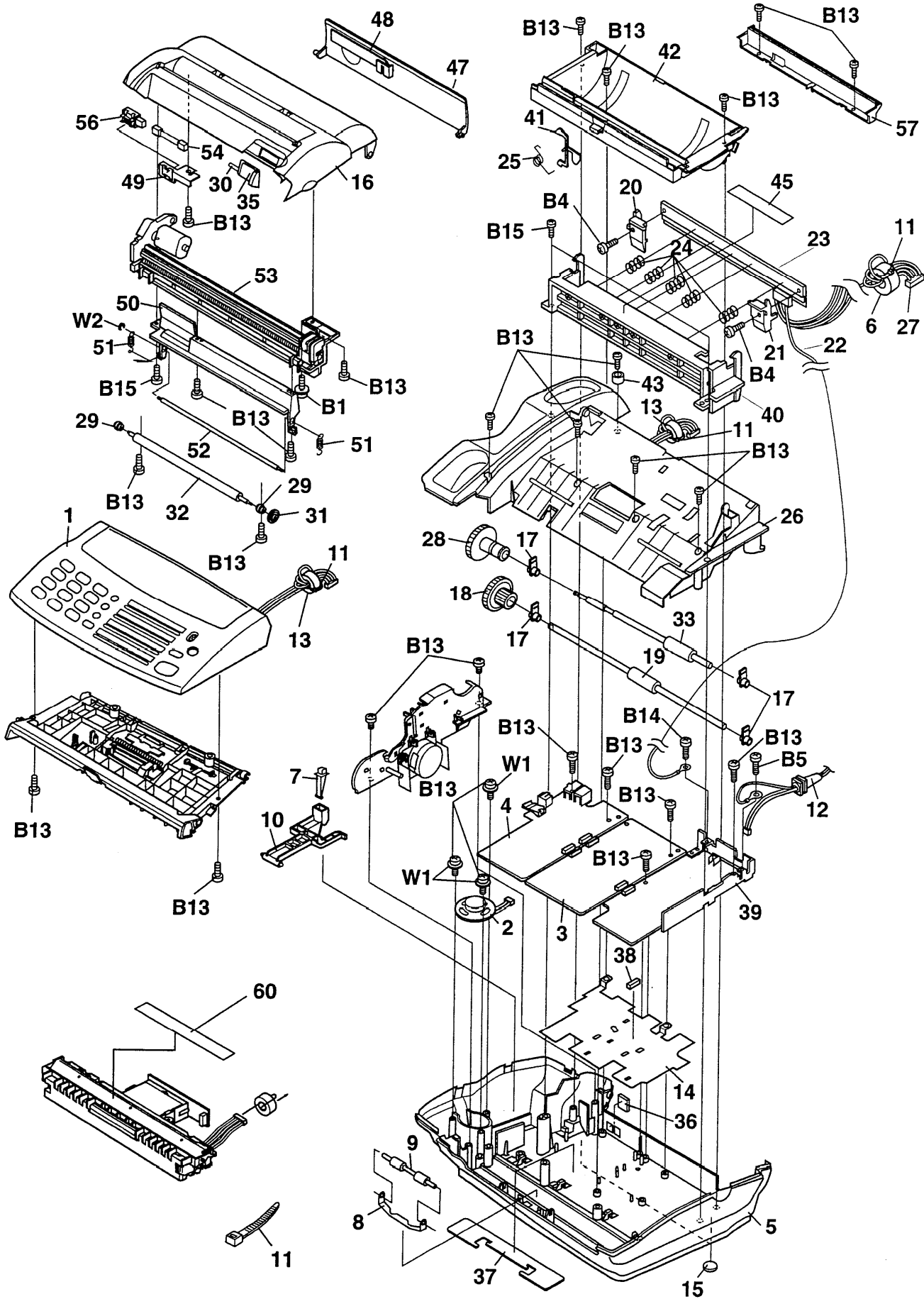
CONTENTS

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| 1 Cabinet, etc. | 7 Control PWB unit |
| 2 Upper cabinet | 8 TEL-Liu PWB unit |
| 3 Document guide upper | 9 Power supply PWB unit |
| 4 Drive unit | 10 CCD PWB unit |
| 5 Optical unit | 50 Hardware parts |
| 6 Packing material & Accessories | ■ Index |

Because parts marked with "△" is indispensable for the machine safety maintenance and operation, it must be replaced with the parts specific to the product specification.

FO-155A
FO-355A

1 Cabinet, etc.

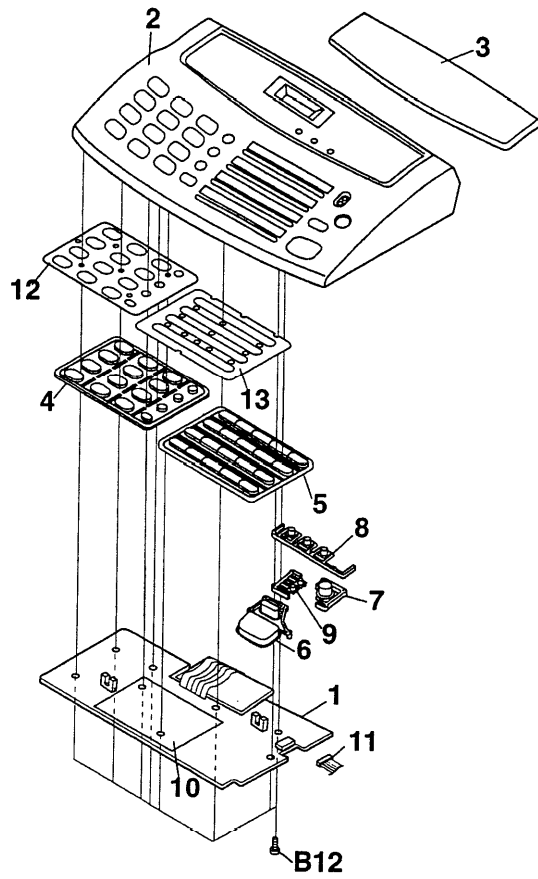


1 Cabinet, etc.

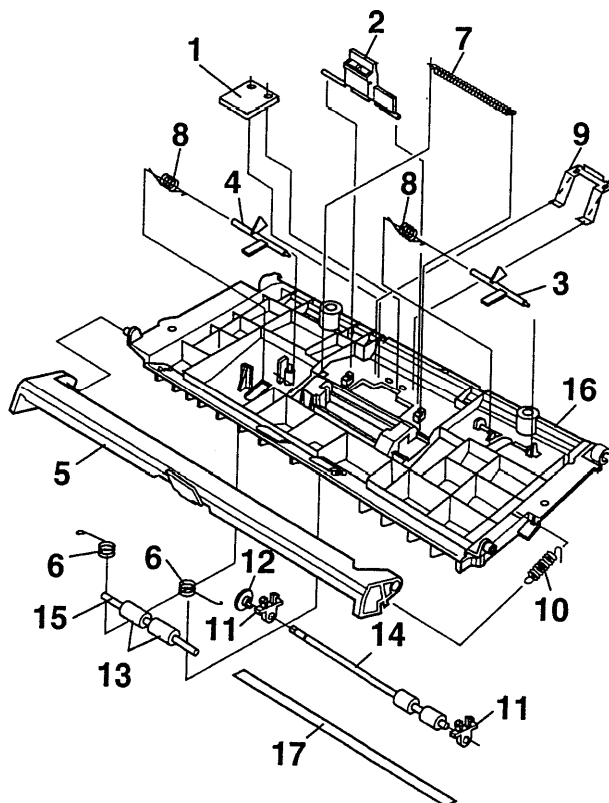
NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
1	CPNLC2361XH15	BR	N	D	Upper cabinet ass'y	[155A]
	CPNLC2361XH20	BQ	N	D	Upper cabinet ass'y	[355A]
2	CCNW-4436XH01	AF		C	Speaker ass'y	
3	DCEKC887GXHZZ	CB	N	E	Control PWB unit	[155A]
	DCEKC889GXHZZ	CA	N	E	Control PWB unit	[355A]
4	DCEKL462AXH02	BR	N	E	TEL-Liu PWB unit	
5	GCABB2265XHZA	BB		D	Lower cabinet	
6	RCORF2063XHZZ	AF		B	Core (TRA20)	
7	MLEVP2203XHZA	AD		C	Hook switch lever A	
8	MSPRP2687XHZZ	AC		C	Pinch pressing spring 2	
9	NRÖLP2249XHZZ	AE		C	Pinch roller 2	
10	MLEVP2204XHZZ	AD		C	Hook switch lever B	
11	LBNDJ2006XHZZ	AA		C	Band (GT-100M)	
12	QACCL762AXHZZ	AY		B	AC cord ass'y	
13	RCORF2064XHZZ	AF		B	Core (TRA31)	
14	LPLTM2755XHZZ	AL		C	Shield sheet	
15	GLEGG2061XHZZ	AE		C	Rubber leg	
16	GCOVA2355XHZA	AV		D	Recording paper cover A	[155A]
	GCOVA2356XHZA	AV		D	Recording paper cover A	[355A]
17	LBSHP2063XHZZ	AC		C	Roller bearing	
18	NGERH2282XHZZ	AC		C	Transfer roller 1 gear	
19	NRÖLR2313XHZZ	AR		C	Transfer roller 1	
20	PGiDM2432XHZZ	AD		C	Head guide, right	
21	PGiDM2433XHZZ	AD		C	Head guide, left	
22	QCNW-4434XHYZ	AE	N	C	Head earth cable	
23	RHEDZ2046XHZZ	BT	N	B	Thermal head	
24	MSPRC2691XHZZ	AB		C	Head pressure spring	
25	MSPRD2787XHZZ	AD		C	Paper sensor lever spring	
26	PGiDP2430XHZA	AX		C	Document guide lower	
27	QCNW-4433XHYZ	AP	N	C	Hed cable	
28	NGERH2283XH01	AF		C	Paper feed roller gear ass'y	
29	LBSHP2068XHZZ	AC		C	Platen bearing	
30	MSPRP2788XHZZ	AD		C	Hopper spring	
31	NGERH2286XHZZ	AC		C	Platen gear	
32	NRÖLR2316XHZZ	AX		C	Platen roller	
33	NRÖLR2315XHZZ	AS		C	Paper feed roller	
35	PGiDP2431XHZA	AE		C	Hopper guide	
36	PSHEZ3031XHZZ	AA		C	Jack sheet	
37	PSHEZ3150XHZZ	AF	N	C	Blind sheet	[355A]
38	PSPA22199XHZZ	AQ		C	Spacer	
39	RDENT2087XHZZ	BS	N	E	Power supply PWB unit	
40	LFRM-2155XHZZ	AU		C	Head frame	
41	MLEVP2202XHZZ	AD		C	Paper sensor lever	
42	GDAi-2071XHZA	AT		D	Recording paper cover B	
43	LSTPP2042XHZZ	AC		C	Panel stopper	
45	TLABH3803XHZZ	AD		C	Recording paper set label	[155A]
	TLABH3803XHYZ	AF	N	C	Recording paper set label	[355A]
47	GCOVA2357XHZA	AV		C	Hopper cover	[355A]
48	PHÖP-2087XHZZ	AG		C	Extention hopper	[155A]
	PHÖP-2088XHZA	AM		C	Extention hopper	[355A]
49	LANGF2802XHZZ	AE		C	Sensor bracket	[355A]
50	LPLTP2754XHZZ	AR		C	Anti curl	[355A]
51	MSPRC2793XHZZ	AE	N	C	Anti curl spring	[355A]
52	NSFTZ2255XHZZ	AF		C	Anti curl shaft	[355A]
53	PCUT-2032XHZZ	BK		C	Cutter	[355A]
54	QCNW-4439XHYZ	AF	N	C	Sensor cable	[355A]
56	VHPSG113///-1	AP		B	Paper sensor	[355A]
57	LPLTP2775XHZZ	AQ	N	C	Squeeze plate	[355A]
60	SPAKA4346XHZZ	AH		C	Protection sheet	

FO-155A
FO-355A

2 Upper cabinet



3 Document guide upper



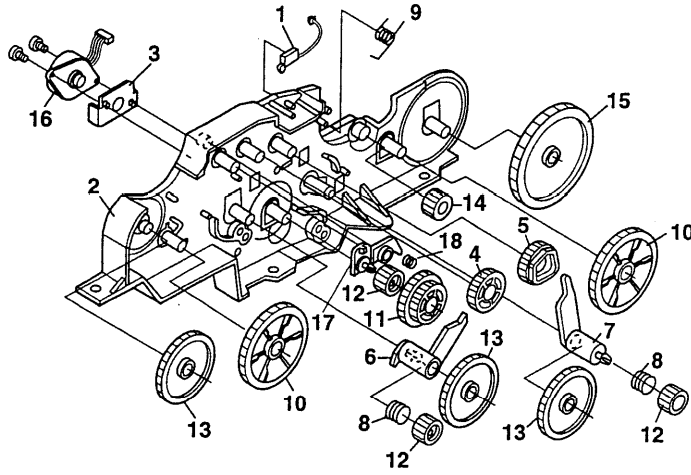
2 Upper cabinet

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
1	DCEKP443AXH01	BL		E	Operation panel PWB unit
2	GCABA2264XHZF	AS	N	D	Upper cabinet
3	HPNLC2361XHZA	AH		D	Decoration panel [155A]
	HPNLC2361XHZA	AS		D	Decoration panel [355A]
4	JBTN-2157XHZA	AK		C	Dial key
5	JBTN-2158XHZA	AG		C	Direct key
6	JBTN-2159XHZA	AF		C	Start key
7	JBTN-2160XHZA	AD		C	Stop key
8	JBTN-2161XHXA	AE	N	C	Mode key
9	JBTN-2162XHZA	AC		C	Volume key
10	PSHEZ3124XHZA	AF	N	C	Protect sheet
11	CCNW-4431XH01	AT	N	C	Panel cable
12	PSHEZ3158XHZZ	AB	N	C	Anti vibration sheet 1
13	PSHEZ3159XHZA	AF	N	C	Anti vibration sheet 2
	(Unit)				
901	CPNLC2361XH15	BR	N	D	Upper cabinet ass'y [155A]
	CPNLC2361XH20		N	D	Upper cabinet ass'y [355A]

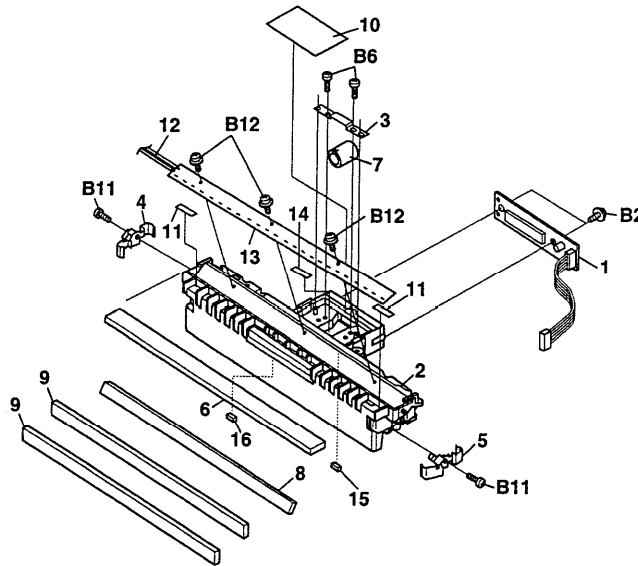
3 Document guide upper

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
1	LPLTG2593XHZZ	AG		C	Rubber, separator
2	LPLTP2703XHZZ	AC		C	Separator plate
3	MLEVP2199XHZZ	AC	N	C	Front sensor lever
4	MLEVP2200XHZZ	AC	N	C	Document sensor lever
5	MLEVP2201XHZZ	AK	N	C	Panel lock lever
6	MSPRC2692XHZZ	AB		C	Pinch roller spring
7	MSPRC2797XHZZ	AE	N	C	Separator spring
8	MSPRD2733XHZZ	AD	N	C	Sensor lever spring
9	MSPRP2688XHZZ	AC		C	Feed spring
10	MSPRT2734XHZZ	AC	N	C	Panel lock spring
11	NBRGP2141XHZZ	AH		C	Transfer bearing 2
12	NGERH2275XHZZ	AC	N	C	Transfer gear 2
13	NR0LP2300XHZZ	AC		C	Pinch roller 1
14	NR0LR2314XHZZ	AQ	N	C	Transfer roller
15	NSFTZ2228SCZZ	AC		C	Pinch roller shaft
16	PGiDP2429XHZZ	AW	N	C	Document guide upper
17	PSHEZ3112XHZZ	AD		C	Face sheet

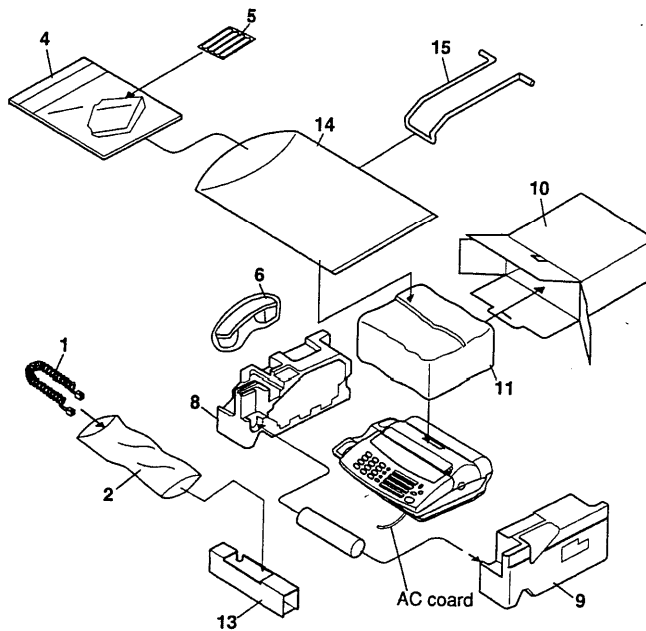
4 Drive unit



5 Optical unit



6 Packing material & Accessories



FO-155A
FO-355A

7 Control PWB unit

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
1	UBATL2033SCZZ	AK		B	Battery [BAT100]
2	VCEAGA1CW106M	AA		C	Capacitor (16WV 10 μ F) [C1]
3	VCEAGA1EW475M	AA		C	Capacitor (25WV 4.7 μ F) [C2]
4	VCEAGA1EW226M	AB		C	Capacitor (25WV 22 μ F) [C3]
5	VCEAGA1EW226M	AB		C	Capacitor (25WV 22 μ F) [C4]
6	VCEAGA1EW226M	AB		C	Capacitor (25WV 22 μ F) [C5]
7	VCEAGA1CW106M	AA		C	Capacitor (16WV 10 μ F) [C6]
8	VCEAGA1EW226M	AB		C	Capacitor (25WV 22 μ F) [C7]
9	VCEAGA1EW226M	AB		C	Capacitor (25WV 22 μ F) [C8]
10	VCEAGA1HW106M	AA		C	Capacitor (50WV 10.0 μ F) [C9]
11	VCEAGA1CW106M	AA		C	Capacitor (16WV 10 μ F) [C10]
12	VCKYTV1EF104Z	AA		C	Capacitor (25WV 0.1 μ F) [C100]
13	VCKYTV1CF105Z	AB		C	Capacitor (16WV 1.0 μ F) [C101]
14	VCCSTV1HL102J	AA		C	Capacitor (50WV 1000PF) [C102]
15	VCKYTV1EF104Z	AA		C	Capacitor (25WV 0.1 μ F) [C103]
16	VCKYTV1EB104K	AA		C	Capacitor (25WV 0.10 μ F) [C104]
17	VCKYTV1HB222K	AA		C	Capacitor (50WV 2200PF) [C105]
18	VCKYTV1HB222K	AA		C	Capacitor (50WV 2200PF) [C106]
19	VCKYTV1HB222K	AA		C	Capacitor (50WV 2200PF) [C107]
20	VCKYTV1HB222K	AA		C	Capacitor (50WV 2200PF) [C108]
21	VCKYTV1HB222K	AA		C	Capacitor (50WV 2200PF) [C109]
22	VCKYTV1HB103K	AB		C	Capacitor (50WV 0.010 μ F) [C110]
23	VCKYTV1HB472K	AA		C	Capacitor (50WV 4700PF) [C111]
24	VCKYTV1CF105Z	AB		C	Capacitor (16WV 1.0 μ F) [C112]
25	VCKYTV1CF105Z	AB		C	Capacitor (16WV 1.0 μ F) [C113]
26	VCKYTV1EF104Z	AA		C	Capacitor (25WV 0.1 μ F) [C114]
27	VCCSTV1HL102J	AA		C	Capacitor (50WV 1000PF) [C115]
28	VCKYTV1EF104Z	AA		C	Capacitor (25WV 0.1 μ F) [C116]
29	VCCSTV1HL102J	AA		C	Capacitor (50WV 1000PF) [C118] [155A]
	VCKYTV1EF104Z	AA		C	Capacitor (25WV 0.1 μ F) [C118] [355A]
30	VCCSTV1HL102J	AA		C	Capacitor (50WV 1000PF) [C119]
31	VCCSTV1HL102J	AA		C	Capacitor (50WV 1000PF) [C120]
32	VCKYTV1HB222K	AA		C	Capacitor (50WV 2200PF) [C200]
33	VCKYTV1HB222K	AA		C	Capacitor (50WV 2200PF) [C201]
34	VCCCTV1HH180J	AA		C	Capacitor (50WV 18PF) [C202]
35	VCCCTV1HH180J	AA		C	Capacitor (50WV 18PF) [C204]
36	VCKYTV1CF105Z	AB		C	Capacitor (16WV 1.0 μ F) [C205]
37	VCKYTQ1HF104Z	AA		C	Capacitor (50WV 0.1 μ F) [C206] [355A]
38	VCKYTV1CF105Z	AB		C	Capacitor (16WV 1.0 μ F) [C207]
39	VCKYTV1EF104Z	AA		C	Capacitor (25WV 0.1 μ F) [C208] [355A]
40	VCKYTV1EF104Z	AA		C	Capacitor (25WV 0.1 μ F) [C209]
41	VRS-TS2AD000J	AA		C	Resistor (1/10W 0 Ω \pm 5%) [C210] [155A]
	VCKYTV1EF104Z	AA		C	Resistor (25WV 0.1 μ F) [C210]
42	VCKYTV1EF104Z	AA		C	Capacitor (25WV 0.1 μ F) [C211]
43	VCKYTV1EF104Z	AA		C	Capacitor (25WV 0.1 μ F) [C212]
44	VCKYTV1HB222K	AA		C	Capacitor (50WV 2200PF) [C213]
45	VCKYTV1EF104Z	AA		C	Capacitor (25WV 0.1 μ F) [C214]
46	VCKYTV1CF105Z	AB		C	Capacitor (16WV 1.0 μ F) [C215]
47	VCKYTV1CF105Z	AB		C	Capacitor (16WV 1.0 μ F) [C216]
48	VCKYTV1EF104Z	AA		C	Capacitor (25WV 0.1 μ F) [C217]
49	VCKYTV1CF105Z	AB		C	Capacitor (16WV 1.0 μ F) [C218]
50	VCKYTV1CF105Z	AB		C	Capacitor (16WV 1.0 μ F) [C219]
51	VCKYTV1HB222K	AA		C	Capacitor (50WV 2200PF) [C220]
52	VCKYTV1EF104Z	AA		C	Capacitor (25WV 0.1 μ F) [C221]
53	VCKYTV1EF104Z	AA		C	Capacitor (25WV 0.1 μ F) [C222]
54	VCKYTV1CF105Z	AB		C	Capacitor (16WV 1.0 μ F) [C223]
55	VCKYTV1EF104Z	AA		C	Capacitor (25WV 0.1 μ F) [C224]
56	VCKYTV1HH5R0C	AB		C	Capacitor (25WV 5.0 μ F) [C225] [155A]
	VCCCTV1HH5R0C	AA		C	Capacitor (50WV 5.0PF) [C225] [355A]
57	VCKYTV1EF104Z	AA		C	Capacitor (25WV 0.1 μ F) [C226]
58	VCKYTV1EF104Z	AA		C	Capacitor (25WV 0.1 μ F) [C228]
59	VCKYTV1CF105Z	AB		C	Capacitor (16WV 1.0 μ F) [C229]
60	VCKYTV1EF104Z	AA		C	Capacitor (25WV 0.1 μ F) [C230]
61	VCKYTV1HB222K	AA		C	Capacitor (50WV 2200PF) [C231]
62	VCCSTV1HL102J	AA		C	Capacitor (50WV 1000PF) [C232] [155A]
	VCKYTV1EF104Z	AA		C	Capacitor (25WV 0.1 μ F) [C232] [355A]
63	VCKYTV1EF104Z	AA		C	Capacitor (25WV 0.1 μ F) [C233]
64	VCKYTV1HB103K	AB		C	Capacitor (50WV 0.010 μ F) [C234]
65	VCKYTV1CF105Z	AB		C	Capacitor (16WV 1.0 μ F) [C235]
66	VCCCTV1HH330J	AA		C	Capacitor (50WV 33PF) [C236]
67	VCCCTV1HH270J	AC		C	Capacitor (50WV 27PF) [C237]
68	VCKYTV1EF104Z	AA		C	Capacitor (25WV 0.1 μ F) [C238]
69	VCKYTV1EB104K	AA		C	Capacitor (25WV 0.10 μ F) [C239]
70	VCCSTV1HL102J	AA		C	Capacitor (50WV 1000PF) [C240]
71	VCKYTV1CF105Z	AB		C	Capacitor (16WV 1.0 μ F) [C241]
72	VCCSTV1HL391J	AA		C	Capacitor (50WV 390PF) [C242]
73	VCKYTV1EB104K	AA		C	Capacitor (25WV 0.10 μ F) [C243]
74	VCKYTV1EF104Z	AA		C	Capacitor (25WV 0.1 μ F) [C244]
75	VCKYTV1EF104Z	AA		C	Capacitor (25WV 0.1 μ F) [C245]
76	VCKYTV1EF104Z	AA		C	Capacitor (25WV 0.1 μ F) [C246]

7 Control PWB unit

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
77	VCKYTQ1HF104Z	AA		C	Capacitor (50WV 0.1 μ F) [C247] [155A]
78	VCKYTV1HB222K	AA		C	Capacitor (50WV 2200pF) [C250]
79	VCCSTV1HL102J	AA		C	Capacitor (50WV 1000PF) [C251]
80	VCCSTV1HL102J	AA		C	Capacitor (50WV 1000PF) [C252]
81	VCCSTV1HL102J	AA		C	Capacitor (50WV 1000PF) [C253]
82	VCCSTV1HL102J	AA		C	Capacitor (50WV 1000PF) [C254]
83	VCCSTV1HL102J	AA		C	Capacitor (50WV 1000PF) [C255]
84	QCNCM7014SC0G	AB		C	Connector (7pin) [CNCCD]
85	QCNCM2442SC0B	AB		C	Connector (2pin) [CNCSW]
86	QCNCM2401SC0F	AB		C	Connector (6pin) [CNCUT] [355A]
87	QCNCM2499SC1B	AF		C	Connector (12pin) [CNLIUA]
88	QCNCM2499SC1D	AG		C	Connector (14pin) [CNLIUB]
89	QCNCM7014SC0F	AB		C	Connector (6pin)(SF-1018) [CNMT]
90	QCNCM2482SC1F	AF		C	Connector (16pin) [CNPN]
91	QCNCM7014SC0C	AA		C	Connector (3pin) [CNPS] [355A]
92	QCNCW2500SC0H	AF		C	Connector (8pin) [CNPW]
93	QCNCM7014SC1C	AC		C	Connector (13pin) [CNTH]
94	VRS-HT3AA620J	AC		C	Resistor (1W 62 Ω \pm 5%) [D1] [155A]
	VHERD22FB3/-1	AC		B	Diode (RD22FB) [D1] [355A]
95	VRS-TS2AD000J	AA		C	Resistor (1/10W 0 Ω \pm 5%) [D200]
96	VRS-TS2AD000J	AA		C	Resistor (1/10W 0 Ω \pm 5%) [D201]
97	VHD1SS355/-1	AB		B	Diode (1SS355) [D202]
98	VHD1SS355/-1	AB		B	Diode (1SS355) [D203]
99	VHD1SS355/-1	AB		B	Diode (1SS355) [D204]
100	VHDDAP202U/-1	AB		B	Diode (DAP202U) [D205]
101	VHD1SS355/-1	AB		B	Diode (1SS355) [D206]
102	VHD1SS355/-1	AB		B	Diode (1SS355) [D207]
103	VHV iCPS07/-1	AA		B	IC protector (ICP-S0.7) [F100]
104	VHiTA7291PV-1	AM		B	IC (TA7291P) [IC1] [355A]
	QSOCZ2015XH32	AC	N	C	IC socket (32pin) [IC2]
105	VHi27010FUB0H	BM	N	B	IC ROM (for EP-ROM) [IC2] [355A]
	VHi27010FTS0G	BM	N	B	IC ROM (for EP-ROM) [IC2] [155A]
106	VHiR96SFELC-1	BG		B	IC with in IC3/IC5 paer (SFE-LC) [IC3]
107	VHiM5255CF70L	AW		B	IC (M5M5255CFP) [IC4]
108	VHiR96SFELC-1	BG		B	IC with in IC3/IC5 paer (R96DFXL or R96SHF) [IC5]
109	VHiNJM4558F-1	AD		B	IC (NJM4558M) [IC6]
110	VHiULN2003AN/	AE		B	IC (ULN2003) [IC7]
111	VHiHEF4053BT1	AE	N	B	IC (HEF4053) [IC100]
112	VHiHEF4051BT1	AL	N	B	IC (HEF4051) [IC101]
113	VHiNJM2903M/-	AD		B	IC (NJM2903) [IC102]
114	VHiNJM318M/-F	AF		B	IC (NJM318M) [IC103]
115	VHiPST591CMT1	AE		B	IC (PST591C) [IC104]
116	VHiNJM2904M-1	AE		B	IC (NJM2904M) [IC105]
117	VRS-TP2BD000J	AA		C	Resistor (1/8W 0 Ω \pm 5%) [L200]
118	RciLZ1044CCZZ	AC		C	Coil (NZ3216A) [L201]
119	RciLZ1044CCZZ	AC		C	Coil (NZ3216A) [L202]
120	RciLZ1044CCZZ	AC		C	Coil (NZ3216A) [L203]
121	RciLZ1044CCZZ	AC		C	Coil (NZ3216A) [L204]
122	RciLZ1044CCZZ	AC		C	Coil (NZ3216A) [L205]
123	RciLZ2104SCZZ	AK		C	Coil (MMZ2102S301A) [L206]
124	VSDTC114EK/-1	AB		B	Transistor (DTC114EK) [Q100]
125	VSDTC114EK/-1	AB		B	Transistor (DTC114EK) [Q101]
126	VSDTC114EK/-1	AB		B	Transistor (DTC114EK) [Q102]
127	VSDTC114EK/-1	AB		B	Transistor (DTC114EK) [Q103]
128	VSDTC114EK/-1	AB		B	Transistor (DTC114EK) [Q200]
129	VSDTC114EK/-1	AB		B	Transistor (DTC114EK) [Q201]
130	VS2SC2412KS-1	AB		B	Transistor (2SC2412KS) [Q202]
131	VSDTC114EK/-1	AB		B	Transistor (DTC114EK) [Q203]
132	VRD-HT2EY100J	AA		C	Resistor (1/4W 10 Ω \pm 5%) [R1]
133	RR-XA02R0SC2E	AC		C	Fuse resistor (1/4W 2 Ω) [R2] [355A]
134	VRS-TS2AD271J	AA		C	Resistor (1/10W 270 Ω \pm 5%) [R100]
135	VRS-TS2AD271J	AA		C	Resistor (1/10W 270 Ω \pm 5%) [R101]
136	VRS-TS2AD271J	AA		C	Resistor (1/10W 270 Ω \pm 5%) [R102]
137	VRS-TS2AD000J	AA		C	Resistor (1/10W 0 Ω \pm 5%) [R103]
138	VRS-TS2AD000J	AA		C	Resistor (1/10W 0 Ω \pm 5%) [R104]
139	VRS-TS2AD000J	AA		C	Resistor (1/10W 0 Ω \pm 5%) [R105]
140	VRS-TS2AD271J	AA		C	Resistor (1/10W 270 Ω \pm 5%) [R106]
141	VRS-TS2AD271J	AA		C	Resistor (1/10W 270 Ω \pm 5%) [R107]
142	VRS-TS2AD271J	AA		C	Resistor (1/10W 270 Ω \pm 5%) [R108]
143	VRS-TS2AD271J	AA		C	Resistor (1/10W 270 Ω \pm 5%) [R109]
144	VRS-TS2AD100J	AA		C	Resistor (1/10W 10 Ω \pm 5%) [R110]
145	VRS-TS2AD100J	AA		C	Resistor (1/10W 10 Ω \pm 5%) [R111]
146	VRS-TS2AD103J	AA		C	Resistor (1/10W 10K Ω \pm 5%) [R112]
147	VRS-TS2AD302J	AA		C	Resistor (1/10W 3.0K Ω \pm 5%) [R113]
148	VRS-TS2AD103J	AA		C	Resistor (1/10W 10K Ω \pm 5%) [R114]
149	VRS-TS2AD103J	AA		C	Resistor (1/10W 10K Ω \pm 5%) [R115]
150	VRS-TS2AD271J	AA		C	Resistor (1/10W 270 Ω \pm 5%) [R116]
151	VRS-TS2AD271J	AA		C	Resistor (1/10W 270 Ω \pm 5%) [R117]
152	VRS-TS2AD474J	AA		C	Resistor (1/10W 470K Ω \pm 5%) [R118]
153	VRS-TS2AD473J	AA		C	Resistor (1/10W 47K Ω \pm 5%) [R119]

7 Control PWB unit

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
154	VRS-TS2AD273J	AA		C	Resistor (1/10W 27KΩ ±5%)	[R120]
155	VRS-TS2AD203J	AA		C	Resistor (1/10W 20KΩ ±5%)	[R121]
156	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R122]
157	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R123]
158	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R124]
159	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R125]
160	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R126]
161	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R127]
162	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R128]
163	VRS-TS2AD471J	AA		C	Resistor (1/10W 470Ω ±5%)	[R129]
164	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R130]
165	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R131]
166	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R132]
167	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R133]
168	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R135]
169	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R138]
170	VRS-TS2AD471J	AA		C	Resistor (1/10W 470Ω ±5%)	[R139]
171	VRS-TS2AD471J	AA		C	Resistor (1/10W 470Ω ±5%)	[R140]
172	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R141]
173	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R142]
174	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R143]
175	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R144]
176	VRS-TS2AD302J	AA		C	Resistor (1/10W 3.0KΩ ±5%)	[R146]
177	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R147]
178	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R148]
179	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R149]
180	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R150]
181	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R151]
182	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R152]
183	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R153]
184	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R154]
185	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R155]
186	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R156]
187	VRS-TP2BD000J	AA		C	Resistor (1/8W 0Ω ±5%)	[R157]
188	VRS-TS2AD100J	AA		C	Resistor (1/10W 10Ω ±5%)	[R158]
189	VRS-TS2AD100J	AA		C	Resistor (1/10W 10Ω ±5%)	[R159]
190	VRS-TS2AD100J	AA		C	Resistor (1/10W 10Ω ±5%)	[R160]
191	VRSTSAD1742F	AA		C	Resistor (1/10W 17.4KΩ ±1%)	[R161]
192	VRSTSAD8662F	AA		C	Resistor (1/10W 86.6KΩ ±1%)	[R162]
193	VRS-TS2AD000J	AA		C	Resistor (1/10W 0Ω ±5%)	[R163]
194	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R164]
195	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R165]
196	VRS-TS2AD3R0J	AA		C	Resistor (1/10W 3.0Ω ±5%)	[R166]
197	VRS-TS2AD223J	AA		C	Resistor (1/10W 22KΩ ±5%)	[R167]
198	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R200]
199	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R201]
200	VRS-TS2AD000J	AA		C	Resistor (1/10W 0Ω ±5%)	[R202]
201	VRS-TS2AD106J	AA		C	Resistor (1/10W 10MΩ ±5%)	[R203]
202	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R204]
203	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R205]
204	VRS-TS2AD471J	AA		C	Resistor (1/10W 470Ω ±5%)	[R206]
205	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R207]
206	VRS-TS2AD471J	AA		C	Resistor (1/10W 470Ω ±5%)	[R208]
207	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R210]
208	VRS-TS2AD100J	AA		C	Resistor (1/10W 10Ω ±5%)	[R211] [155A]
	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R211] [355A]
209	VRS-TS2AD104J	AA		C	Resistor (1/10W 100KΩ ±5%)	[R212]
210	VRS-TS2AD100J	AA		C	Resistor (1/10W 10Ω ±5%)	[R213]
211	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R214] [355A]
212	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R215] [355A]
213	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R216] [355A]
214	VRS-TS2AD100J	AA		C	Resistor (1/10W 10Ω ±5%)	[R217]
215	VRS-TS2AD474J	AA		C	Resistor (1/10W 470KΩ ±5%)	[R218]
216	VRS-TS2AD203J	AA		C	Resistor (1/10W 20KΩ ±5%)	[R219]
217	VRS-TS2AD104J	AA		C	Resistor (1/10W 100KΩ ±5%)	[R220]
218	VRS-TS2AD303J	AA		C	Resistor (1/10W 30KΩ ±5%)	[R221]
219	VRS-TS2AD303J	AA		C	Resistor (1/10W 30KΩ ±5%)	[R222]
220	VRS-TS2AD151J	AA		C	Resistor (1/10W 150Ω ±5%)	[R223]
221	VRS-TS2AD223J	AA		C	Resistor (1/10W 22KΩ ±5%)	[R224] [355A]
222	VRS-TS2AD153J	AA		C	Resistor (1/10W 15KΩ ±5%)	[R225] [155A]
	VRS-TS2AD683J	AA		C	Resistor (1/10W 68KΩ ±5%)	[R225]
223	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R227]
224	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R228]
225	VRS-TS2AD332J	AA		C	Resistor (1/10W 3.3KΩ ±5%)	[R229]
226	VRS-TS2AD562J	AA		C	Resistor (1/10W 5.6KΩ ±5%)	[R230]
227	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R231]
228	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R232]
229	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R233]
230	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R234]
231	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R235]

7 Control PWB unit

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
232	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R236]
233	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R237]
234	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R239]
235	VRS-TS2AD000J	AA		C	Resistor (1/10W 0Ω ±5%)	[R241]
236	VRS-TS2AD472J	AA		C	Resistor (1/10W 4.7KΩ ±5%)	[R242]
237	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R243]
238	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R244]
239	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R245]
240	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R246]
241	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R247]
242	VRS-TS2AD471J	AA		C	Resistor (1/10W 470Ω ±5%)	[R248]
243	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R249]
244	VRS-TS2AD820J	AA		C	Resistor (1/10W 82Ω ±5%)	[R250]
245	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R251]
246	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R252]
247	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R253]
248	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R254]
249	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R255]
250	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R256]
251	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R257]
252	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R258]
253	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R259]
254	VRS-TS2AD471J	AA		C	Resistor (1/10W 470Ω ±5%)	[R260] [355A]
255	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R261]
256	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R262]
257	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R263]
258	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R265]
259	VRS-TS2AD000J	AA		C	Resistor (1/10W 0Ω ±5%)	[R266]
260	VRS-TS2AD820J	AA		C	Resistor (1/10W 82Ω ±5%)	[R267]
261	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R268]
262	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R269]
263	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R270]
264	VRS-TS2AD000J	AA		C	Resistor (1/10W 0Ω ±5%)	[R271]
265	VRS-TS2AD000J	AA		C	Resistor (1/10W 0Ω ±5%)	[R272]
266	VRS-TS2AD000J	AA		C	Resistor (1/10W 0Ω ±5%)	[R273]
267	VRS-TS2AD102J	AA		C	Resistor (1/10W 1.0KΩ ±5%)	[R274]
268	VRS-TS2AD100J	AA		C	Resistor (1/10W 10Ω ±5%)	[R275]
269	VRS-TS2AD203J	AA		C	Resistor (1/10W 20KΩ ±5%)	[R276]
270	VRS-TP2BD561J	AA		C	Resistor (1/8W 560Ω ±5%)	[R277]
271	VRS-TS2AD153J	AA		C	Resistor (1/10W 15KΩ ±5%)	[R278]
272	VRS-TS2AD333J	AA		C	Resistor (1/10W 33KΩ ±5%)	[R279]
273	VRS-TS2AD562J	AA		C	Resistor (1/10W 5.6KΩ ±5%)	[R280]
274	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R282]
275	VRS-TS2AD102J	AA		C	Resistor (1/10W 1.0KΩ ±5%)	[R283]
276	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R284]
277	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R285]
278	VRS-TS2AD100J	AA		C	Resistor (1/10W 10Ω ±5%)	[R286]
279	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R287]
280	VRS-TS2AD471J	AA		C	Resistor (1/10W 470Ω ±5%)	[R288] [355A]
281	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R289]
282	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R290]
283	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R291]
284	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R292]
285	VRS-TS2AD471J	AA		C	Resistor (1/10W 470Ω ±5%)	[R293]
286	VRS-TS2AD100J	AA		C	Resistor (1/10W 10Ω ±5%)	[R294]
287	VRS-TP2BD201J	AA		C	Resistor (1/8W 200Ω ±5%)	[R295]
288	VRS-TS2AD820J	AA		C	Resistor (1/10W 82Ω ±5%)	[R296]
289	VRS-TS2AD302J	AA		C	Resistor (1/10W 3.0KΩ ±5%)	[R297]
290	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R298]
291	VRSTS2AD8662F	AA		C	Resistor (1/10W 86.6KΩ ±1%)	[R299]
292	VRSTS2AD4752F	AA		C	Resistor (1/10W 47.5KΩ ±1%)	[R300]
293	VRSTS2AD1183F	AA		C	Resistor (1/10W 118KΩ ±1%)	[R301]
294	VRS-TS2AD333J	AA		C	Resistor (1/10W 33KΩ ±5%)	[R302]
295	VRS-TS2AD333J	AA		C	Resistor (1/10W 33KΩ ±5%)	[R303]
296	VRS-TP2BD000J	AA		C	Resistor (1/8W 0Ω ±5%)	[R304]
297	VRS-TS2AD223J	AA		C	Resistor (1/10W 22KΩ ±5%)	[R305]
298	VRS-TS2AD271J	AA		C	Resistor (1/10W 270Ω ±5%)	[R306]
299	RRLYD3127QCZZ	AH		B	Relay (JS1AF-24V)	[RLY100]
301	RCRSB0297AFZZ	AD		B	Crystal (32.768KHz)	[X1]
302	RCRSP2080SCZZ	AF		B	Crystal (24.00014MHz)	[X2]
	(Unit)					
901	DCEKC887GXHZZ	CB	N	E	Control PWB unit	[155A]
	DCEKC889GXHZZ	CA	N	E	Control PWB unit	[355A]

8 TEL-Liu PWB unit

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
1	VHVDSS401M/-1	AG		B	Arrestor (DSS-401M-A22F)	[AR1]
2	RC-EZ107VSC1C	AC		C	Capacitor (16WV 100μF)	[C1]
3	VCEAGA1HW475M	AA		C	Capacitor (50WV 4.7μF)	[C2]
4	VCEAGA1HW105M	AB		C	Capacitor (50WV 1.0μF)	[C3]
5	VCEAGA1CW107M	AC		C	Capacitor (16WV 100μF)	[C4]
6	VCEAGA1EW476M	AA		C	Capacitor (25WV 47μF)	[C5]
7	VCEAGA1EW476M	AA		C	Capacitor (25WV 47μF)	[C6]
8	VCEAGA1AW336M	AA		C	Capacitor (10WV 33μF)	[C7]
9	VCEAGA1VW226M	AC		C	Capacitor (35WV 22μF)	[C8]
10	VCFYJU2EA474K	AD		C	Resistor (250WV 0.47μF)	[C9]
11	VCEAGA1HW106M	AA		C	Capacitor (50WV 10μF)	[C10]
12	VCEAGA1HW475M	AA		C	Capacitor (50WV 4.7μF)	[C11]
13	VCEAGA0JW107M	AC		C	Capacitor (6.3WV 100μF)	[C12]
14	VCQYNA1HM224K	AC		C	Capacitor (50WV 0.22μF)	[C13]
15	VCEAGA2AW474M	AC		C	Capacitor (100WV 0.47μF)	[C15]
16	VCEAGA1EW476M	AA		C	Capacitor (25WV 47μF)	[C16]
17	VCEAGA1EW476M	AA		C	Capacitor (25WV 47μF)	[C17]
18	VCEAGA1EW476M	AA		C	Capacitor (25WV 47μF)	[C18]
19	VCKYTV1HB392K	AA		C	Capacitor (50WV 3900PF)	[C101]
20	VCKYTQ1HB104K	AB		C	Capacitor (50WV 0.1μF)	[C102]
21	VCKYTV1HB102K	AA		C	Capacitor (50WV 1000PF)	[C103]
22	VCCCTV1HH121J	AA		C	Capacitor (50WV 120PF)	[C104]
23	VCKYTV1HB681K	AA		C	Capacitor (50WV 680PF)	[C105]
24	VCKYTV1HB822K	AA		C	Capacitor (50WV 8200PF)	[C106]
25	VCKYTV1HB103K	AB		C	Capacitor (50WV 0.01μF)	[C107]
26	VCKYTV1HB103K	AB		C	Capacitor (50WV 0.01μF)	[C108]
27	VCKYTV1HB103K	AB		C	Capacitor (50WV 0.01μF)	[C109]
28	VCCCTV1HH391J	AA		C	Capacitor (50WV 390PF)	[C110]
29	VCKYTV1HB103K	AB		C	Capacitor (50WV 0.01μF)	[C111]
30	VCKYTV1HF223Z	AA		C	Capacitor (50WV 0.022μF)	[C112]
31	VCKYTV1HF223Z	AA		C	Capacitor (50WV 0.022μF)	[C113]
32	VRS-TP2BD000J	AA		C	Resistor (1/8W 0Ω ±5%)	[C114]
33	VCKYTQ1HB473K	AA		C	Capacitor (50WV 0.047μF)	[C115]
34	VCKYTQ1HB104K	AB		C	Capacitor (50WV 0.1μF)	[C116]
35	VCKYTV1HB103K	AB		C	Capacitor (50WV 0.01μF)	[C117]
36	VCKYTV1HB103K	AB		C	Capacitor (50WV 0.01μF)	[C118]
37	VCKYTV1HB562K	AA		C	Capacitor (50WV 5600PF)	[C119]
38	VCKYTV1HB392K	AA		C	Capacitor (50WV 3900PF)	[C120]
39	VCKYTV1HB103K	AB		C	Capacitor (50WV 0.01μF)	[C121]
40	VCKYTV1HB331K	AA		C	Capacitor (50WV 330PF)	[C122]
41	VCKYTQ1EB224K	AB		C	Capacitor (25WV 0.22μF)	[C125]
42	VCKYTV1HB472K	AA		C	Capacitor (50WV 4700PF)	[C126]
43	VCKYTQ1EB124K	CA		C	Capacitor (25WV 0.12μF)	[C127]
44	VCKYTQ1HB473K	AA		C	Capacitor (50WV 0.047μF)	[C128]
45	VCKYTV1HF223Z	AA		C	Capacitor (50WV 0.022μF)	[C129]
46	VCKYTV1EF104Z	AA		C	Capacitor (25WV 0.1μF)	[C130]
47	VCKYTQ1HB104K	AB		C	Capacitor (50WV 0.1μF)	[C131]
48	VCKYTV1HB103K	AB		C	Capacitor (50WV 0.01μF)	[C132]
49	VCKYTV1HF223Z	AA		C	Capacitor (50WV 0.022μF)	[C133]
50	VCKYTV1HF223Z	AA		C	Capacitor (50WV 0.022μF)	[C134]
51	VCKYTV1HF223Z	AA		C	Capacitor (50WV 0.022μF)	[C135]
52	VCKYTQ1EF105Z	AB		C	Capacitor (25WV 1.0μF)	[C136]
53	RRLYZ3420SCZZ	AR		B	Relay (G6GN-2D)	[CML]
54	QJAKZ2047SC0D	AG		C	Jack (40-218A0-04BKA)	[CNHJ]
55	QCNCM7014SC0B	AD		C	Connector (2pin)	[CNLED]
56	QCNCW2500SC1B	AF		C	Connector (12Pin)	[CNLIUA]
57	QCNCW2500SC1D	AG		C	Connector (14Pin)	[CNLIUB]
58	QCNCM2401SC0B	AA		C	Connector (2pin)	[CNLSP]
59	VHDDSS131/-1	AA		B	Diode (1SS131)	[D1]
60	VRD-HT2EY000J	AA		C	Resistor (1/4W 0Ω ±5%)	[D2]
61	VHD1SS355/-1	AB		B	Diode (1SS355)	[D101]
62	VHiTEA1062A-1	AR		B	IC (TEA1062A)	[IC1]
63	VHiNJM2113M-1	AG		B	IC (NJM2113M)	[IC101]
64	VHiNJM4558F-1	AD		B	IC (NJM4558M)	[IC102]
65	VHiNJM4558F-1	AD		B	IC (NJM4558M)	[IC103]
66	VHiBU4053BCF1	AE		B	IC (BU4053BCF)	[IC104]
67	VRS-TP2BD000J	AA		C	Resistor (1/8W 0Ω ±5%)	[J101]
68	VRS-TP2BD000J	AA		C	Resistor (1/8W 0Ω ±5%)	[J102]
69	VRS-TP2BD000J	AA		C	Resistor (1/8W 0Ω ±5%)	[J103]
70	VRS-TP2BD000J	AA		C	Resistor (1/8W 0Ω ±5%)	[J104]
71	VRS-TP2BD000J	AA		C	Resistor (1/8W 0Ω ±5%)	[J105]
72	VRS-TP2BD000J	AA		C	Resistor (1/8W 0Ω ±5%)	[J106]
73	VRS-TP2BD000J	AA		C	Resistor (1/8W 0Ω ±5%)	[J107]
74	VRS-TP2BD000J	AA		C	Resistor (1/8W 0Ω ±5%)	[J108]
75	VRS-TP2BD000J	AA		C	Resistor (1/8W 0Ω ±5%)	[J109]
76	VRS-TP2BD000J	AA		C	Resistor (1/8W 0Ω ±5%)	[J110]
77	VRS-TP2BD000J	AA		C	Resistor (1/8W 0Ω ±5%)	[J111]
78	VRS-TP2BD000J	AA		C	Resistor (1/8W 0Ω ±5%)	[J112]
79	VRS-TP2BD000J	AA		C	Resistor (1/8W 0Ω ±5%)	[J113]
80	VRS-TP2BD000J	AA		C	Resistor (1/8W 0Ω ±5%)	[J114]

8 TEL-Liu PWB unit

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
81	VRS-TP2BD000J	AA		C	Resistor (1/8W 0Ω ±5%)	[J115]
82	VRS-TP2BD000J	AA		C	Resistor (1/8W 0Ω ±5%)	[J116]
83	VRS-TP2BD000J	AA		C	Resistor (1/8W 0Ω ±5%)	[J117]
84	VRS-TP2BD000J	AA		C	Resistor (1/8W 0Ω ±5%)	[J118]
85	VRD-HT2EY000J	AA		C	Resistor (1/4W 0Ω ±5%)	[JP1]
86	VRD-HT2EY000J	AA		C	Resistor (1/4W 0Ω ±5%)	[JP3]
87	VRD-HT2EY000J	AA		C	Resistor (1/4W 0Ω ±5%)	[JP5]
88	VRD-HT2EY000J	AA		C	Resistor (1/4W 0Ω ±5%)	[JP6]
89	VRD-HT2EY000J	AA		C	Resistor (1/4W 0Ω ±5%)	[JP7]
90	VRS-TP2BD000J	AA		C	Resistor (1/8W 0Ω ±5%)	[JP103]
91	VRS-TP2BD000J	AA		C	Resistor (1/8W 0Ω ±5%)	[JP106]
92	RCiLL2124SCZZ	AF		C	Coil (CHC6030TR101)	[L1]
93	RCiLL2124SCZZ	AF		C	Coil (CHC6030TR101)	[L2]
94	RCiLL2124SCZZ	AF		C	Coil (CHC6030TR101)	[L3]
95	RfiLN2013SCZZ	AG		C	Coil (CHC1307TR580)	[L4]
96	QJAKZ2046SCDB	AH		C	Jack (39-580A0-02BKA)	[MJ1/MJ2]
97	VHPTLP521-1BL	AE		B	Photo transistor (TLP521)	[PC1]
98	VHPPC814///-1	AE		B	Photo coupler (PC814)	[PC2]
99	VHPPC817CD/-1	AC		B	Photo coupler (PC817CD)	[PC3]
100	VHPPC817CD/-1	AC		B	Photo coupler (PC817CD)	[PC4]
101	VHPPC817CD/-1	AC		B	Photo coupler (PC817CD)	[PC5]
102	VHPPC817CD/-1	AC		B	Photo coupler (PC817CD)	[PC6]
103	VHPSG206///-1	AE		B	Photo transistor (SG206)	[PSNS]
104	VS2SA1807-P-1	AE		B	Transistor (2SA1807)	[Q1]
105	VS2SC4061K/-1	AC		B	Transistor (2SC4061K)	[Q101]
106	VS2SC4061K/-1	AC		B	Transistor (2SC4061K)	[Q102]
107	VSDTC114EK/-1	AB		B	Transistor (DTC114EK)	[Q103]
108	VSDTD114EK/-1	AC		B	Transistor (DTD114EK)	[Q104]
109	VSDTC114EK/-1	AB		B	Transistor (DTC114EK)	[Q105]
110	VSDTC114EK/-1	AB		B	Transistor (DTC114EK)	[Q106]
111	VS2SC2412KR-1	AD		B	Transistor (2SC2412KR)	[Q107]
112	VS2SC2412KR-1	AD		B	Transistor (2SC2412KR)	[Q108]
113	VS2SA1037KR-1	AB		B	Transistor (2SA1037KR)	[Q109]
114	VS2SC2412KR-1	AD		B	Transistor (2SC2412KR)	[Q110]
115	VSDTC114EK/-1	AB		B	Transistor (DTC114EK)	[Q111]
116	VSDTC114EK/-1	AB		B	Transistor (DTC114EK)	[Q112]
117	VSDTC114EK/-1	AB		B	Transistor (DTC114EK)	[Q113]
118	VSDTC114EK/-1	AB		B	Transistor (DTC114EK)	[Q114]
119	VSDTC114EK/-1	AB		B	Transistor (DTC114EK)	[Q115]
120	VSDTC114EK/-1	AB		B	Transistor (DTC114EK)	[Q116]
121	VRD-HT2HY513J	AA		C	Resistor (1/2W 51KΩ ±5%)	[R1]
122	VRS-HT3AA333J	AA		C	Resistor (1W 33KΩ ±5%)	[R2]
123	VRD-HT2HY200J	AA		C	Resistor (1/2W 20Ω ±5%)	[R3]
124	VRS-HT3AA430J	AB		C	Resistor (1W 43Ω ±5%)	[R4]
125	VRS-TS2AD302J	AA		C	Resistor (1/10W 30KΩ ±5%)	[R101]
126	VRS-TS2AD104J	AA		C	Resistor (1/10W 100KΩ ±5%)	[R102]
127	VRS-TS2AD753J	AA		C	Resistor (1/10W 75KΩ ±5%)	[R103]
128	VRS-TS2AD910J	AA		C	Resistor (1/10W 91Ω ±5%)	[R104]
129	VRS-TS2AD203J	AA		C	Resistor (1/10W 20KΩ ±5%)	[R105]
130	VRS-TS2AD203J	AA		C	Resistor (1/10W 20KΩ ±5%)	[R106]
131	VRS-TS2AD303J	AA		C	Resistor (1/10W 30KΩ ±5%)	[R107]
132	VRS-TS2AD753J	AA		C	Resistor (1/10W 75KΩ ±5%)	[R108]
133	VRS-TS2AD203J	AA		C	Resistor (1/10W 20KΩ ±5%)	[R109]
134	VRS-TS2AD333J	AA		C	Resistor (1/10W 33KΩ ±5%)	[R110]
135	VRS-TS2AD622J	AA		C	Resistor (1/10W 6.2KΩ ±5%)	[R111]
136	VRS-TS2AD203J	AA		C	Resistor (1/10W 20KΩ ±5%)	[R112]
137	VRS-TS2AD203J	AA		C	Resistor (1/10W 20KΩ ±5%)	[R113]
138	VRS-TS2AD102J	AA		C	Resistor (1/10W 1.0KΩ ±5%)	[R114]
139	VRS-TS2AD183J	AA		C	Resistor (1/10W 18KΩ ±5%)	[R115]
140	VRS-TS2AD102J	AA		C	Resistor (1/10W 1.0KΩ ±5%)	[R116]
141	VRS-TS2AD823J	AA		C	Resistor (1/10W 82KΩ ±5%)	[R117]
142	VRS-TS2AD562J	AA		C	Resistor (1/10W 5.6KΩ ±5%)	[R118]
143	VRSTS2AD3651F	AA		C	Resistor (1/10W 3.65KΩ ±5%)	[R119]
144	VRS-TS2AD000J	AA		C	Resistor (1/10W 0Ω ±5%)	[R120]
145	VRS-TS2AD300J	AA		C	Resistor (1/10W 30Ω ±5%)	[R123]
146	VRS-TS2AD124J	AA		C	Resistor (1/10W 120KΩ ±5%)	[R124]
147	VRS-TS2AD134J	AA		C	Resistor (1/10W 130KΩ ±5%)	[R125]
148	VRS-TS2AD512J	AA		C	Resistor (1/10W 5.1KΩ ±5%)	[R126]
149	VRS-TS2AD102J	AA		C	Resistor (1/10W 1.0KΩ ±5%)	[R127]
150	VRS-TS2AD681J	AA		C	Resistor (1/10W 680Ω ±5%)	[R128]
151	VRS-TS2AD303J	AA		C	Resistor (1/10W 30KΩ ±5%)	[R129]
152	VRS-TS2AD203J	AA		C	Resistor (1/10W 20KΩ ±5%)	[R130]
153	VRS-TS2AD621J	AA		C	Resistor (1/10W 620Ω ±5%)	[R131]
154	VRS-TS2AD000J	AA		C	Resistor (1/10W 0KΩ ±5%)	[R133]
155	VRS-TS2AD472J	AA		C	Resistor (1/10W 4.7KΩ ±5%)	[R134]
156	VRS-TS2AD224J	AA		C	Resistor (1/10W 220KΩ ±5%)	[R135]
157	VRS-TS2AD104J	AA		C	Resistor (1/10W 100KΩ ±5%)	[R136]
158	VRS-TS2AD000J	AA		C	Resistor (1/10W 0Ω ±5%)	[R137]
159	VRS-TS2AD821J	AA		C	Resistor (1/10W 820Ω ±5%)	[R138]
160	VRS-TS2AD301J	AA		C	Resistor (1/10W 300Ω ±5%)	[R139]

8 TEL-Liu PWB unit

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
161	VRS-TS2AD392J	AA		C	Resistor (1/10W 3.9KΩ ±5%)	[R140]
162	VRS-TS2AD242J	AA		C	Resistor (1/10W 2.4KΩ ±5%)	[R141]
163	VRS-TS2AD104J	AA		C	Resistor (1/10W 100KΩ ±5%)	[R142]
164	VRS-TS2AD683J	AA		C	Resistor (1/10W 68KΩ ±5%)	[R143]
165	VRS-TS2AD104J	AA		C	Resistor (1/10W 100KΩ ±5%)	[R144]
166	VRS-TS2AD104J	AA		C	Resistor (1/10W 100KΩ ±5%)	[R145]
167	VRS-TS2AD122J	AA		C	Resistor (1/10W 1.2KΩ ±5%)	[R146]
168	VRS-TS2AD203J	AA		C	Resistor (1/10W 20KΩ ±5%)	[R147]
169	VRS-TS2AD203J	AA		C	Resistor (1/10W 20KΩ ±5%)	[R148]
170	VRS-TS2AD203J	AA		C	Resistor (1/10W 20KΩ ±5%)	[R149]
171	VRS-TS2AD103J	AA		C	Resistor (1/10W 10KΩ ±5%)	[R150]
172	VRS-TS2AD221J	AA		C	Resistor (1/10W 220Ω ±5%)	[R151]
173	VRS-TS2AD683J	AA		C	Resistor (1/10W 68KΩ ±5%)	[R152]
174	VRS-TS2AD332J	AA		C	Resistor (1/10W 3.3KΩ ±5%)	[R153]
175	VRS-TS2AD471J	AA		C	Resistor (1/10W 470Ω ±5%)	[R154]
176	VRS-TS2AD471J	AA		C	Resistor (1/10W 470Ω ±5%)	[R155]
177	VRS-TS2AD471J	AA		C	Resistor (1/10W 470Ω ±5%)	[R156]
178	VRS-TS2AD471J	AA		C	Resistor (1/10W 470Ω ±5%)	[R157]
179	VRS-TS2AD473J	AA		C	Resistor (1/10W 47KΩ ±5%)	[R158]
180	VRS-TS2AD201J	AG		C	Resistor (1/10W 200Ω ±5%)	[R159]
181	RH-DX2007SCZZ	AC		B	Bridge diode (S1ZB60)	[REC1]
182	QSW-Z2206SCZZ	AH		B	Hook switch (SPPY 11027A)	[RHS]
183	RTRNZ2140XHZZ	AN		B	Transformer (Z2140)	[T1]
184	RTRNi2142XHZZ	AR		B	Transformer (I2142)	[T2]
185	VHVTN07G471-1	AB		B	Varistor (TNR7G471KT2)	[VA1]
186	VHVTN07G471-1	AB		B	Varistor (TNR7G471KT2)	[VA2]
187	VHVTN07G101-1	AB		B	Varistor (TNR7G101KT2)	[VA3]
188	VHEHZS3B1//--1	AC		B	Zener diode (HZS3B1-TA)	[ZD1]
189	VHEHZS3B1//--1	AC		B	Zener diode (HZS3B1-TA)	[ZD2]
190	VHEMTZJ180B-1	AC		B	Zener diode (MTZJ18B-TA)	[ZD3]
191	VHEHZS3B1//--1	AC		B	Zener diode (HZS3B1-TA)	[ZD4]
192	VHEHZS3B1//--1	AC		B	Zener diode (HZS3B1-TA)	[ZD5]
193	VHEHZS3B1//--1	AC		B	Zener diode (HZS3B1-TA)	[ZD6]
194	VHEHZS3B1//+1	AC		B	Zener diode (HZS3B1-TA)	[ZD7]
195	VHEMTZJ8R2B-1	AC		B	Zener diode (MTZJ8.2B)	[ZD8]
196	VHE1ZC15//--1	AC		B	Zener diode (1ZC15)	[ZD9]
197	VHEHZ2A1//--1	AC		B	Zener diode (HZ2A1)	[ZD10]
198	VHEHZ2A1//--1	AC		B	Zener diode (HZ2A1)	[ZD11]
199	VHEHZS3B1//--1	AC		B	Zener diode (HZS3B1)	[ZD12]
200	VHEHZS3B1//--1	AC		B	Zener diode (HZS3B1)	[ZD13]
201	VHEMTZJ3R0B-1	AC		B	Zener diode (MTZJ3.0B)	[ZD14]
202	VHEMTZJ5R6B-1	AB		B	Zener diode (MTZJ5.6B)	[ZD15]
	(Unit)					
901	DCEKL462AXH02	BR	N	E	TEL-Liu PWB unit	

9 Power supply PWB unit

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
1	0CB829650004/	BD		B	Transformer (PT-P85-KTT)	[T1]
2	0CBUKZ0697ZZ/	AL		C	Filter (PLAB2230R4R01B1)	[L1]
3	0CBUKZ0578ZZ/	AH		C	Filter (PLAA2230R4R01B1)	[L2]
4	0CBBFZ89154Z/	AC		C	Ferrite core (BL01RN1-A62B1)	[FB1]
5	0CBUCC0013DZ/	AM		B	IC (UPC78N12H)	[IC1]
6	0CBUCB0112AZ/	AK		B	IC (NJM7805FA)	[IC2]
7	0CBUAG0141AZ/	AR		B	FET (2SK2484)	[Q1]
8	0CBUAC0056BZ/	AD		B	Transistor (2SC2002-L)	[Q2]
9	0CBUAC0098EZ/	AK		B	Transistor (2SC3518-K)	[Q3]
10	0CBUAC0004DZ/	AC		B	Transistor (2SC945-PA)	[Q4]
11	0CBUBB0149DZ/	AH		B	Diode stack (D3SBA60)	[D1]
12	0CBUBC0220BZ/	AD		B	Diode (1NU41)	[D2]
13	VHD1N4148//--1	AA		B	Diode (1SS55)	[D3]
14	0CBUBC0182BL/	AE		B	Diode (10ELS2-TA1B2)	[D4]
15	0CBUBC0280BZ/	AC		B	Diode (11EQ04)	[D5]
16	0CBUBB0166BB/	AK		B	Diode stack (F10P20F-L)	[D6]
17	0CBUDAC270D/	AC		B	Zener diode (RD27ESAB3)	[ZD1]
18	0CBUBDBW3R6B/	AB		B	Zener diode (MTZJ T-72 3.6A)	[ZD2]
19	0CBUBDAE300D/	AD		B	Zener diode (RD30FB3)	[ZD3]
20	0CBUBDBW6R2C/	AB		B	Zener diode (MTZJ T-72 6.2B)	[ZD4]
21	0CBUDC0139AZ/	AN		B	Photo coupler (PC113Y11)	[PC1]
22	0CBUEFC564BA/	AC		C	Metal film resistor (SFR25H560K(52))	[R1]
23	0CBUEFER22CH/	AD		C	Metal film resistor (SPRX2 R22J)	[R2]
24	0CBUEEB471CT/	AC		C	Carbon resistor (RD16S-T26-471J)	[R3]
25	0CBUEEB183CT/	AC		C	Carbon resistor (RD16S-T26-183J)	[R4]
26	0CBUEEB564CT/	AC		C	Carbon resistor (RD16S-T26-564J)	[R5,6]
27	0CBUEFE823CG/	AC		C	Metal film resistor (RSS2 823J)	[R7,8]
28	0CBUEFE391CG/	AD		C	Metal film resistor (RSS2 391J)	[R9]

9 Power supply PWB unit

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
29	0CBUEEB330CW	AC		C	Carbon resistor (RDF16S-T26-330J)
30	0CBUEED561CJ	AD	N		Metal film resistor (RSS1 561J)
31	0CBUEEC222BS	AC		C	Carbon resistor (RDF50SS-T26-222J)
32	0CBUEEB271CT	AC		C	Carbon resistor (RD16S-T26-271J)
33	0CBUEEB682CT	AC		C	Carbon resistor (RD16S-T26-682J)
34	0CBUEEB242CT	AC		C	Carbon resistor (RD16S-T26-242J)
35	0CBUEFF102BK	AD	N		Metal film resistor (RSS3-L20-102J)
36	0CBUFBA501DC	AC		B	Variable resistor (KVSF637AB501)
37	0CBUGFZ2224GQ	AG		C	Film capacitor (PA224-C)
38	0CBUGCZ222CK	AF		C	Ceramic capacitor (DE1410-1E222MACT4K-KD)
39	0CBUGZ0945ZZ	AQ		C	Block capacitor (LGE2G820MHSESF)
40	0CBUGCU103BC	AD		C	Ceramic capacitor (DE1307-1E103Z1K)
41	0CBUGCU221BQ	AD		C	Ceramic capacitor (DE0705-1R221K1K-MHR)
42	0CBUGFF102ER	AC		C	Film capacitor (AMZF-103K50)
43	0CBUGFF683ER	AD		C	Film capacitor (AMZF-683K50)
44	0CBUGFF102ER	AC		C	Film capacitor (AMZF-102K50)
45	0CBUGCQ472AR	AF	N		Ceramic capacitor (DE7150-477F472MVA1-KC *S*)
46	0CBUGAD101PQ	AD		C	Capacitor (LXF25VB100(M)FT-6.3)
47	0CBUGAD470QK	AD		C	Capacitor (URZ1E470MCH1TA)
48	0CBUGAC122GK	AG		C	Capacitor (UPL1C122MH1AA)
49	0CBUGAC221HD	AC		C	Capacitor (UVZ1C221MEH1AA)
50	0CBUGCS222AP	AC		C	Ceramic capacitor (DD08-63E222P500)
51	0CBUGAE122PV	AH		C	Capacitor (LXF35VB1200(M)MC-16)
52	0CBUGAE221HD	AD		C	Capacitor (UVZ1V221MPH1AA)
53	0CBUGFF471ER	AC		C	Film capacitor (AMZF-471K50)
54	0CBUEZ0507ZZ	AD		B	Varistor (ERZV07D471-CS)
55	0CBUZZ0100ZZ	AH		B	Spark gap (AG-10PC702R-L3N)
56	0CBPJCZ20037	AG		A	Current fuse (19181 1.25A)
57	0CBPJT0115ZZ	AF		A	Thermal cutoff (U22 (115°C))
58	0CBUDZ0052ZZ	AG		B	Thermistor (M16007C)
59	0CBPKZ0194ZZ	AC		C	Base post ass'y (B 2P3-VH)
60	0CBPCZ0193ZZ	AF		C	Connector (08P-FJ)
61	0CBPCZ0084ZZ	AD		C	Connector (RE-HO22TD-1190)
62	0CBPEZ0055ZZ	AD		C	Socket (JM-2W-96)
64	0CBLRH0368ZQ	AU	N	C	Heat sink (D2189-5001BT EZS)
65	0CBMRZ0362ZZ	AF		C	Supporter (SUP-110 PPS)
66	0CBMZ0610ZZ	AL		C	Heating sheet (D2189-3001A)
	(Unit)				
901	RDENT2087XHZZ	BS	N	E	Power supply PWB unit

10 CCD PWB unit

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
1	VCEAJA1EW226M	AB		C	Capacitor (25WV 22μF)
2	VCKYTQ1EF104Z	AA		C	Capacitor (25WV 0.1μF)
3	QCNW-4437XHYZ	AK	N	C	Connector
4	VHITCD1206UP1	AX		B	IC (TCD1206SUP)
5	VS2SC2412KS-1	AB		B	Transistor (2SC2412KS)
6	VRS-TP2BD222J	AA		C	Resistor (1/8W 2.2KΩ ±5%)
7	VRS-TP2BD390J	AA		C	Resistor (1/8W 39Ω ±5%)
	(Unit)				
901	DCEKD464AXH11	BF	N	E	CCD PWB unit

50 Hardware parts

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
B1	LX-BZ2138XHZZ	AB		C	Screw
B2	LX-BZ2182XHZZ	AB		C	Screw
B4	XBBSD30P06000	AA		C	Screw (3×6)
B5	XBPSN40P06K00	AA		C	Screw (M4×6K)
B6	XEBSD30P06000	AA		C	Screw (M3×6)
B7	XEBSD30P08000	AA		C	Screw (M3×8)
B8	XEBSF30P08000	AA		C	Screw (M3×8)
B9	XBPSD30P08000	AA		C	Screw (M3×8)
B11	XJP3SD30P04000	AA		C	Screw (3×4)
B12	XUBSD20P06000	AA		C	Screw (2×6)
B13	XEBSD30P10000	AA		C	Screw (M3×10)
B14	XBPSD30P06K00	AA		C	Screw (3×6K)
B15	XEBSD30P12000	AA		C	Screw (M3×12)
W1	XWHSD30-08100	AA		C	Washer
W2	XRESJ20-04000	AA		C	2E Ring

Index

PARTS CODE	NO.	PRICE RANK	NEW MARK	PART RANK
[C]				
CCNW-4431XH01	2- 11	AT	N	C
CCNW-4436XH01	1- 2	AF		C
CPNLC2361XH15	1- 1	BR	N	D
"	2- 901	BR	N	D
CPNLC2361XH20	1- 1	BQ	N	D
"	2- 901		N	D
[D]				
DCEKC887GXHZZ	1- 3	CB	N	E
"	7- 901	CB	N	E
DCEKC889GXHZZ	1- 3	CA	N	E
"	7- 901	CA	N	E
DCEKD464AXH11	5- 1	BF	N	E
"	10- 901	BF	N	E
DCEKL462AXH02	1- 4	BR	N	E
"	8- 901	BR	N	E
DCEKP443AXH01	2- 1	BL	N	E
DUNTK424AXHOG	6- 6	AY	N	E
DUNTK4925XHE2	6- 6	AR	N	E
[G]				
GCABA2264XHZF	2- 2	AS	N	D
GCABB2265XHZA	1- 5	BB		D
GCOVA2355XHZA	1- 16	AV		D
GCOVA2356XHZA	1- 16	AV		D
GCOVA2357XHZA	1- 47	AV		C
GDAi-2071XHZA	1- 42	AT		D
GLEGG2061XHZZ	1- 15	AE		C
[H]				
HPNLC2361XHZA	2- 3	AH		D
HPNLC2361XHZD	2- 3	AS		D
[J]				
JBTN-2157XHZA	2- 4	AK		C
JBTN-2158XHZA	2- 5	AG		C
JBTN-2159XHZA	2- 6	AF		C
JBTN-2160XHZA	2- 7	AD		C
JBTN-2161XHXA	2- 8	AE	N	C
JBTN-2162XHZA	2- 9	AC		C
[L]				
LANGF2802XHZZ	1- 49	AE		C
LBNDJ2006XHZZ	1- 11	AA		C
LBSHP2063XHZZ	1- 17	AC		C
LBSHP2068XHZZ	1- 29	AC		C
LFRM-2147XHZA	5- 2	AV		C
LFRM-2153XHZZ	4- 2	AU		C
LFRM-2155XHZZ	1- 40	AU		C
LPLTG2593XHZZ	3- 1	AG		C
LPLTM2741XHZZ	4- 3	AE		C
LPLTM2755XHZZ	1- 14	AL		C
LPLTP2703XHZZ	3- 2	AC		C
LPLTP2754XHZZ	1- 50	AR		C
LPLTP2775XHZZ	1- 57	AQ	N	C
LSTPP2042XHZZ	1- 43	AC		C
LX-BZ2138XHZZ	50-B1	AB		C
LX-BZ2182XHZZ	50-B2	AB		C
[M]				
MCAMP2019XHZZ	4- 4	AC		C
MCAMP2020XHZZ	4- 5	AC		C
MLEVP2190XHZZ	4- 6	AC		C
MLEVP2191XHZZ	4- 7	AC		C
MLEVP2194XHZZ	4- 17	AC		C
MLEVP2199XHZZ	3- 3	AC	N	C
MLEVP2200XHZZ	3- 4	AC	N	C
MLEVP2201XHZZ	3- 5	AK	N	C
MLEVP2202XHZZ	1- 41	AD		C
MLEVP2203XHZA	1- 7	AD		C
MLEVP2204XHZZ	1- 10	AD		C
MSPRC2691XHZZ	1- 24	AB		C
MSPRC2692XHZZ	3- 6	AB		C
MSPRC2735XHZZ	4- 8	AC		C
MSPRC2793XHZZ	1- 51	AE	N	C
MSPRC2797XHZZ	3- 7	AE	N	C
MSPRD2733XHZZ	3- 8	AD	N	C
MSPRD2736XHZZ	4- 9	AC		C
MSPRD2744XHZZ	4- 18	AB		C
MSPRD2787XHZZ	1- 25	AD		C
MSPRP2512XHZZ	5- 3	AK		C
MSPRP2618XHZZ	5- 4	AD		C
MSPRP2619XHZZ	5- 5	AD		C
MSPRP2687XHZZ	1- 8	AC		C
MSPRP2688XHZZ	3- 9	AC		C

PARTS CODE	NO.	PRICE RANK	NEW MARK	PART RANK
MSPRP2788XHZZ	1- 30	AD		C
MSPRT2734XHZZ	3- 10	AC	N	C
[N]				
NBRGP2141XHZZ	3- 11	AH		C
NGERH2275XHZZ	3- 12	AC	N	C
NGERH2276XHZZ	4- 10	AC		C
NGERH2277XHZZ	4- 11	AC		C
NGERH2278XHZZ	4- 12	AC		C
NGERH2279XHZZ	4- 13	AC		C
NGERH2280XHZZ	4- 14	AC		C
NGERH2281XHZZ	4- 15	AD		C
NGERH2282XHZZ	1- 18	AC		C
NGERH2283XH01	1- 28	AF		C
NGERH2286XHZZ	1- 31	AC		C
NR0LP2249XHZZ	1- 9	AE		C
NR0LP2300XHZZ	3- 13	AC		C
NR0LR2313XHZZ	1- 19	AR		C
NR0LR2314XHZZ	3- 14	AQ	N	C
NR0LR2315XHZZ	1- 33	AS		C
NR0LR2316XHZZ	1- 32	AX		C
NSFTZ2228SCZZ	3- 15	AC		C
NSFTZ2255XHZZ	1- 52	AF		C
[P]				
PCUSS2075XHZZ	5- 15	AA		C
PCUSS2076XHZZ	5- 16	AA		C
PCUT-2032XHZZ	1- 53	BK		C
PFLT-2006XHZZ	5- 14	AA		C
PgIDM2432XHZZ	1- 20	AD		C
PgIDM2433XHZZ	1- 21	AD		C
PgIDP2429XHZZ	3- 16	AW	N	C
PgIDP2430XHZA	1- 26	AX		C
PgIDP2431XHZA	1- 35	AE		C
PGLSP2043XHZZ	5- 6	AK		C
PHOP-2087XHZZ	1- 48	AG		C
PHOP-2088XHZA	1- 48	AM		C
PLNS-2043XHZZ	5- 7	AU		B
PMiR-2061XHZZ	5- 8	AH		C
PMiR-2062XHZZ	5- 9	AM		C
PSHEZ2879XHZZ	5- 10	AK		C
PSHEZ2915XHZZ	5- 11	AY		C
PSHEZ3031XHZZ	1- 36	AA		C
PSHEZ3112XHZZ	3- 17	AD		C
PSHEZ3124XHZA	2- 10	AF	N	C
PSHEZ3150XHZZ	1- 37	AF	N	C
PSHEZ3158XHZZ	2- 12	AB	N	C
PSHEZ3159XHZA	2- 13	AF	N	C
PSPAZ2199XHZZ	1- 38	AQ		C
PWiR-2018XHZZ	6- 15	AP		D
[Q]				
QACCL762AXHZZ	1- 12	AY		B
QCNCM2401SC0B	8- 58	AA		C
QCNCM2401SC0F	7- 86	AB		C
QCNCM2442SC0B	7- 85	AB		C
QCNCM2482SC1F	7- 90	AF		C
QCNCM2499SC1B	7- 87	AF		C
QCNCM2499SC1D	7- 88	AG		C
QCNCM7014SC0B	8- 55	AD		C
QCNCM7014SC0C	7- 91	AA		C
QCNCM7014SC0F	7- 89	AB		C
QCNCM7014SC0G	7- 84	AB		C
QCNCM7014SC1C	7- 93	AC		C
QCNCW2500SC0H	7- 92	AF		C
QCNCW2500SC1B	8- 56	AF		C
QCNCW2500SC1D	8- 57	AG		C
QCNW-3976XHOG	6- 1	AT		C
QCNW-4433XHYZ	1- 27	AP	N	C
QCNW-4434XHYZ	1- 22	AE	N	C
QCNW-4437XHYZ	10- 3	AK	N	C
QCNW-4439XHYZ	1- 54	AF	N	C
QCNW-4441XHYZ	5- 12	AE	N	C
QJAKZ2046SCDB	8- 96	AH		C
QJAKZ2047SC0D	8- 54	AG		C
QSOCZ2015XH32	7- 105	AC	N	C
QSW-Z2206SCZZ	8- 182	AH		B
[R]				
RC-EZ107VSC1C	8- 2	AC		C
RCiLL2124SCZZ	8- 92	AF		C
"	8- 93	AF		C
"	8- 94	AF		C
RCiLZ1044CCZZ	7- 118	AC		C

PARTS CODE	NO.	PRICE RANK	NEW MARK	PART RANK
RCiLZ1044CCZZ	7- 119	AC		C
"	7- 120	AC		C
"	7- 121	AC		C
"	7- 122	AC		C
RCiLZ2104SCZZ	7- 123	AK		C
RCORF2063XHZZ	1- 6	AF		B
RCORF2064XHZZ	1- 13	AF		B
RCRSB0297AFZZ	7- 301	AD		B
RCRSP2080SCZZ	7- 302	AF		B
RDENT2087XHZZ	1- 39	BS	N	E
"	9- 901	BS	N	E
RFiLN2013SCZZ	8- 95	AG		C
RH-DX2007SCZZ	8- 181	AC		B
RHEDZ2046XHZZ	1- 23	BT	N	B
RMOTZ2121SCZZ	4- 16	AZ	N	B
RR-XA02R0SC2E	7- 133	AC		C
RRLYD3127QCZZ	7- 299	AH		B
RRLYZ3420SCZZ	8- 53	AR		B
RTRNi2142XHZZ	8- 184	AR		B
RTRNZ2140XHZZ	8- 183	AN		B
[S]				
SPAKA4346XHZZ	1- 60	AH		C
SPAKA4655XHZZ	6- 9	AF		D
SPAKA4656XHZZ	6- 8	AF		D
SPAKA4657XHZZ	6- 13	AC		D
SPAKC4766XHZZ	6- 10	AN	N	D
SPAKC4772XHZZ	6- 10	AN	N	D
SPAKP3385SCZZ	6- 11	AG		D
SSAKA2003XHZZ	6- 14	AA		D
SSAKA3001CCZZ	6- 2	AA		D
[T]				
TiNSE3553XHZZ	6- 4	AQ	N	D
TLABH3733XHZA	6- 5	AD		D
TLABH3733XHZA	6- 5	AD		D
TLABH3803XHYZ	1- 45	AF	N	C
TLABH3803XHZZ	1- 45	AD		C
[U]				
UBATL2033SCZZ	7- 1	AK		B
[V]				
VCCCTV1HH121J	8- 22	AA		C
VCCCTV1HH180J	7- 34	AA		C
"	7- 35	AA		C
VCCCTV1HH270J	7- 67	AC		C
VCCCTV1HH330J	7- 66	AA		C
VCCCTV1HH391J	8- 28	AA		C
VCCCTV1HH5R0C	7- 56	AA		C
VCCSTV1HL102J	7- 14	AA		C
"	7- 27	AA		C
"	7- 29	AA		C
"	7- 30	AA		C
"	7- 31	AA		C
"	7- 62	AA		C
"	7- 70	AA		C
"	7- 79	AA		C
"	7- 80	AA		C
"	7- 81	AA		C
"	7- 82	AA		C
"	7- 83	AA		C
VCCSTV1HL391J	7- 72	AA		C
VCEAGA0JW107M	8- 13	AC		C
VCEAGA1AW336M	8- 8	AA		C
VCEAGA1CW106M	7- 2	AA		C
"	7- 7	AA		C
"	7- 11	AA		C
VCEAGA1CW107M	8- 5	AC		C
VCEAGA1EW226M	7- 4	AB		C
"	7- 5	AB		C
"	7- 6	AB		C
"	7- 8	AB		C
"	7- 9	AB		C
VCEAGA1EW475M	7- 3	AA		C
VCEAGA1EW476M	8- 6	AA		C
"	8- 7	AA		C
"	8- 16	AA		C
"	8- 17	AA		C
"	8- 18	AA		C
VCEAGA1HW105M	8- 4	AB		C
VCEAGA1HW106M	7- 10	AA		C
"	8- 11	AA		C
VCEAGA1HW475M	8- 3	AA		C

PARTS CODE	NO.	PRICE RANK	NEW MARK	PART RANK
VCEAGA1HW475M	8- 12	AA		C
VCEAGA1VW226M	8- 9	AC		C
VCEAGA2AW474M	8- 15	AC		C
VCEAJA1EW226M	10- 1	AB		C
VCFYJU2EA474K	8- 10	AD		C
VCKYTQ1EB124K	8- 43	CA		C
VCKYTQ1EB224K	8- 41	AB		C
VCKYTQ1EF104Z	10- 2	AA		C
VCKYTQ1EF105Z	8- 52	AB		C
VCKYTQ1HB104K	8- 20	AB		C
"	8- 34	AB		C
"	8- 47	AB		C
VCKYTQ1HB473K	8- 33	AA		C
"	8- 44	AA		C
VCKYTQ1HF104Z	7- 37	AA		C
"	7- 77	AA		C
VCKYTV1CF105Z	7- 13	AB		C
"	7- 24	AB		C
"	7- 25	AB		C
"	7- 36	AB		C
"	7- 38	AB		C
"	7- 46	AB		C
"	7- 47	AB		C
"	7- 49	AB		C
"	7- 50	AB		C
"	7- 54	AB		C
"	7- 59	AB		C
"	7- 65	AB		C
"	7- 71	AB		C
VCKYTV1EB104K	7- 16	AA		C
"	7- 69	AA		C
"	7- 73	AA		C
VCKYTV1EF104Z	7- 12	AA		C
"	7- 15	AA		C
"	7- 26	AA		C
"	7- 28	AA		C
"	7- 29	AA		C
"	7- 39	AA		C
"	7- 40	AA		C
"	7- 41	AA		C
"	7- 42	AA		C
"	7- 43	AA		C
"	7- 45	AA		C
"	7- 48	AA		C
"	7- 52	AA		C
"	7- 53	AA		C
"	7- 55	AA		C
"	7- 57	AA		C
"	7- 58	AA		C
"	7- 60	AA		C
"	7- 62	AA		C
"	7- 63	AA		C
"	7- 68	AA		C
"	7- 74	AA		C
"	7- 75	AA		C
"	7- 76	AA		C
"	8- 46	AA		C
VCKYTV1HB102K	8- 21	AA		C
VCKYTV1HB103K	7- 22	AB		C
"	7- 64	AB		C
"	8- 25	AB		C
"	8- 26	AB		C
"	8- 27	AB		C
"	8- 29	AB		C
"	8- 35	AB		C
"	8- 36	AB		C
"	8- 39	AB		C
"	8- 48	AB		C
VCKYTV1HB222K	7- 17	AA		C
"	7- 18	AA		C
"	7- 19	AA		C
"	7- 20	AA		C
"	7- 21	AA		C
"	7- 32	AA		C
"	7- 33	AA		C
"	7- 44	AA		C
"	7- 51	AA		C
"	7- 61	AA		C
"	7- 78	AA		C
VCKYTV1HB331K	8- 40	AA		C

PARTS CODE	NO.	PRICE RANK	NEW MARK	PART RANK
VCKYTV1HB392K	8- 19	AA		C
"	8- 38	AA		C
VCKYTV1HB472K	7- 23	AA		C
"	8- 42	AA		C
VCKYTV1HB562K	8- 37	AA		C
VCKYTV1HB681K	8- 23	AA		C
VCKYTV1HB822K	8- 24	AA		C
VCKYTV1HF223Z	8- 30	AA		C
"	8- 31	AA		C
"	8- 45	AA		C
"	8- 49	AA		C
"	8- 50	AA		C
"	8- 51	AA		C
VCKYTV1HH5R0C	7- 56	AB		C
VCQYNA1HM224K	8- 14	AC		C
VHDDAP202U/-1	7- 100	AB		B
VHDDSS131//--1	8- 59	AA		B
VHD1N4148//--1	9- 13	AA		B
VHD1SS355//--1	7- 97	AB		B
"	7- 98	AB		B
"	7- 99	AB		B
"	7- 101	AB		B
"	7- 102	AB		B
"	8- 61	AB		B
VHEHZS3B1//--1	8- 188	AC		B
"	8- 189	AC		B
"	8- 191	AC		B
"	8- 192	AC		B
"	8- 193	AC		B
"	8- 194	AC		B
"	8- 199	AC		B
"	8- 200	AC		B
VHEHZ2A1//--1	8- 197	AC		B
"	8- 198	AC		B
VHEMTZJ180B-1	8- 190	AC		B
VHEMTZJ3R0B-1	8- 201	AC		B
VHEMTZJ5R6B-1	8- 202	AB		B
VHEMTZJ8R2B-1	8- 195	AC		B
VHERD22FB3/-1	7- 94	AC		B
VHE1ZC15//--1	8- 196	AC		B
VHiBU4053BCF1	8- 66	AE		B
VHiHEF4051BT1	7- 112	AL	N	B
VHiHEF4053BT1	7- 111	AE	N	B
VHiM5255CF70L	7- 107	AW		B
VHiNJM2113M-1	8- 63	AG		B
VHiNJM2903M/-	7- 113	AD		B
VHiNJM2904M-1	7- 116	AE		B
VHiNJM318M/-F	7- 114	AF		B
VHiNJM4558F-1	7- 109	AD		B
"	8- 64	AD		B
"	8- 65	AD		B
VHiPST591CMT1	7- 115	AE		B
VHiR96SFELC-1	7- 106	BG		B
"	7- 108	BG		B
VHiTA7291PV-1	7- 104	AM		B
VHiTCD1206UP1	10- 4	AX		B
VHiTEA1062A-1	8- 62	AR		B
VHiULN2003AN/	7- 110	AE		B
VHi27010FTS0G	7- 105	BM	N	B
VHi27010FUB0H	7- 105	BM	N	B
VHPPC814//--1	8- 98	AE		B
VHPPC817CD/-1	8- 99	AC		B
"	8- 100	AC		B
"	8- 101	AC		B
"	8- 102	AC		B
VHPSG113//--1	1- 56	AP		B
VHPSG206//--1	8- 103	AE		B
VHPSNK08A24-1	5- 13	AZ		B
VHPTLP521-1BL	8- 97	AE		B
VHDSS401M/-1	8- 1	AG		B
VHVicPS07//--1	7- 103	AA		B
VHVTN07G101-1	8- 187	AB		B
VHVTN07G471-1	8- 185	AB		B
"	8- 186	AB		B
VRD-HT2EY000J	8- 60	AA		C
"	8- 85	AA		C
"	8- 86	AA		C
"	8- 87	AA		C
"	8- 88	AA		C
"	8- 89	AA		C

PARTS CODE	NO.	PRICE RANK	NEW MARK	PART RANK
VRD-HT2EY100J	7- 132	AA		C
VRD-HT2HY200J	8- 123	AA		C
VRD-HT2HY513J	8- 121	AA		C
VRS-HT3AA333J	8- 122	AA		C
VRS-HT3AA430J	8- 124	AB		C
VRS-HT3AA620J	7- 94	AC		C
VRS-TP2BD000J	7- 117	AA		C
"	7- 187	AA		C
"	7- 296	AA		C
"	8- 32	AA		C
"	8- 67	AA		C
"	8- 68	AA		C
"	8- 69	AA		C
"	8- 70	AA		C
"	8- 71	AA		C
"	8- 72	AA		C
"	8- 73	AA		C
"	8- 74	AA		C
"	8- 75	AA		C
"	8- 76	AA		C
"	8- 77	AA		C
"	8- 78	AA		C
"	8- 79	AA		C
"	8- 80	AA		C
"	8- 81	AA		C
"	8- 82	AA		C
"	8- 83	AA		C
"	8- 84	AA		C
"	8- 90	AA		C
"	8- 91	AA		C
VRS-TP2BD201J	7- 287	AA		C
VRS-TP2BD222J	10- 6	AA		C
VRS-TP2BD390J	10- 7	AA		C
VRS-TP2BD561J	7- 270	AA		C
VRS-TS2AD000J	7- 41	AA		C
"	7- 95	AA		C
"	7- 96	AA		C
"	7- 137	AA		C
"	7- 138	AA		C
"	7- 139	AA		C
"	7- 193	AA		C
"	7- 200	AA		C
"	7- 235	AA		C
"	7- 259	AA		C
"	7- 264	AA		C
"	7- 265	AA		C
"	7- 266	AA		C
"	8- 144	AA		C
"	8- 154	AA		C
VRS-TS2AD100J	7- 144	AA		C
"	7- 145	AA		C
"	7- 188	AA		C
"	7- 189	AA		C
"	7- 190	AA		C
"	7- 208	AA		C
"	7- 210	AA		C
"	7- 214	AA		C
"	7- 268	AA		C
"	7- 278	AA		C
"	7- 286	AA		C
VRS-TS2AD102J	7- 267	AA		C
"	7- 275	AA		C
"	8- 138	AA		C
"	8- 140	AA		C
"	8- 149	AA		C
VRS-TS2AD103J	7- 146	AA		C
"	7- 148	AA		C
"	7- 149	AA		C
"	7- 164	AA		C
"	7- 165	AA		C
"	7- 166	AA		C
"	7- 167	AA		C
"	7- 168	AA		C
"	7- 172	AA		C
"	7- 173	AA		C
"	7- 174	AA		C
"	7- 175	AA		C
"	7- 177	AA		C
"	7- 195	AA		C

PARTS CODE	NO.	PRICE RANK	NEW MARK	PART RANK
VRS-TS2AD103J	7-198	AA		C
"	7-199	AA		C
"	7-207	AA		C
"	7-212	AA		C
"	7-213	AA		C
"	7-224	AA		C
"	7-227	AA		C
"	7-238	AA		C
"	7-239	AA		C
"	7-241	AA		C
"	7-243	AA		C
"	7-252	AA		C
"	7-253	AA		C
"	7-256	AA		C
"	7-257	AA		C
"	7-263	AA		C
"	7-276	AA		C
"	7-279	AA		C
"	7-281	AA		C
"	7-282	AA		C
"	7-283	AA		C
"	7-290	AA		C
"	8-171	AA		C
VRS-TS2AD104J	7-209	AA		C
"	7-217	AA		C
"	8-126	AA		C
"	8-157	AA		C
"	8-163	AA		C
"	8-165	AA		C
"	8-166	AA		C
VRS-TS2AD106J	7-201	AA		C
VRS-TS2AD122J	8-167	AA		C
VRS-TS2AD124J	8-146	AA		C
VRS-TS2AD134J	8-147	AA		C
VRS-TS2AD151J	7-220	AA		C
VRS-TS2AD153J	7-222	AA		C
"	7-271	AA		C
VRS-TS2AD183J	8-139	AA		C
VRS-TS2AD201J	8-180	AG		C
VRS-TS2AD203J	7-155	AA		C
"	7-216	AA		C
"	7-269	AA		C
"	8-129	AA		C
"	8-130	AA		C
"	8-133	AA		C
"	8-136	AA		C
"	8-137	AA		C
"	8-152	AA		C
"	8-168	AA		C
"	8-169	AA		C
"	8-170	AA		C
VRS-TS2AD221J	8-172	AA		C
VRS-TS2AD223J	7-197	AA		C
"	7-221	AA		C
"	7-297	AA		C
VRS-TS2AD224J	8-156	AA		C
VRS-TS2AD242J	8-162	AA		C
VRS-TS2AD271J	7-134	AA		C
"	7-135	AA		C
"	7-136	AA		C
"	7-140	AA		C
"	7-141	AA		C
"	7-142	AA		C
"	7-143	AA		C
"	7-150	AA		C
"	7-151	AA		C
"	7-156	AA		C
"	7-157	AA		C
"	7-158	AA		C
"	7-159	AA		C
"	7-160	AA		C
"	7-161	AA		C
"	7-162	AA		C
"	7-169	AA		C
"	7-178	AA		C
"	7-179	AA		C
"	7-180	AA		C
"	7-181	AA		C
"	7-182	AA		C
"	7-183	AA		C

PARTS CODE	NO.	PRICE RANK	NEW MARK	PART RANK
VRS-TS2AD271J	7-184	AA		C
"	7-185	AA		C
"	7-186	AA		C
"	7-194	AA		C
"	7-202	AA		C
"	7-203	AA		C
"	7-205	AA		C
"	7-208	AA		C
"	7-211	AA		C
"	7-223	AA		C
"	7-228	AA		C
"	7-229	AA		C
"	7-230	AA		C
"	7-231	AA		C
"	7-232	AA		C
"	7-233	AA		C
"	7-234	AA		C
"	7-237	AA		C
"	7-240	AA		C
"	7-245	AA		C
"	7-246	AA		C
"	7-247	AA		C
"	7-248	AA		C
"	7-249	AA		C
"	7-251	AA		C
"	7-255	AA		C
"	7-258	AA		C
"	7-261	AA		C
"	7-262	AA		C
"	7-274	AA		C
"	7-284	AA		C
"	7-298	AA		C
VRS-TS2AD273J	7-154	AA		C
VRS-TS2AD3R0J	7-196	AA		C
VRS-TS2AD300J	8-145	AA		C
VRS-TS2AD301J	8-160	AA		C
VRS-TS2AD302J	7-147	AA		C
"	7-176	AA		C
"	7-289	AA		C
"	8-125	AA		C
VRS-TS2AD303J	7-218	AA		C
"	7-219	AA		C
"	8-131	AA		C
"	8-151	AA		C
VRS-TS2AD332J	7-225	AA		C
"	8-174	AA		C
VRS-TS2AD333J	7-272	AA		C
"	7-294	AA		C
"	7-295	AA		C
"	8-134	AA		C
VRS-TS2AD392J	8-161	AA		C
VRS-TS2AD471J	7-163	AA		C
"	7-170	AA		C
"	7-171	AA		C
"	7-204	AA		C
"	7-206	AA		C
"	7-242	AA		C
"	7-254	AA		C
"	7-280	AA		C
"	7-285	AA		C
"	8-175	AA		C
"	8-176	AA		C
"	8-177	AA		C
"	8-178	AA		C
VRS-TS2AD472J	7-236	AA		C
"	8-155	AA		C
VRS-TS2AD473J	7-153	AA		C
"	8-179	AA		C
VRS-TS2AD474J	7-152	AA		C
"	7-215	AA		C
VRS-TS2AD512J	8-148	AA		C
VRS-TS2AD562J	7-226	AA		C
"	7-273	AA		C
"	8-142	AA		C
VRS-TS2AD621J	8-153	AA		C
VRS-TS2AD622J	8-135	AA		C
VRS-TS2AD681J	8-150	AA		C
VRS-TS2AD683J	7-222	AA		C

PARTS CODE	NO.	PRICE RANK	NEW MARK	PART RANK
VRS-TS2AD683J	8-164	AA		C
"	8-173	AA		C
VRS-TS2AD753J	8-127	AA		C
"	8-132	AA		C
VRS-TS2AD820J	7-244	AA		C
"	7-260	AA		C
"	7-288	AA		C
VRS-TS2AD821J	8-159	AA		C
VRS-TS2AD823J	8-141	AA		C
VRS-TS2AD910J	8-128	AA		C
VRSTS2AD1183F	7-293	AA		C
VRSTS2AD1742F	7-191	AA		C
VRSTS2AD3651F	8-143	AA		C
VRSTS2AD4752F	7-292	AA		C
VRSTS2AD8662F	7-192	AA		C
"	7-291	AA		C
VS DTC114EK/-1	7-124	AB		B
"	7-125	AB		B
"	7-126	AB		B
"	7-127	AB		B
"	7-128	AB		B
"	7-129	AB		B
"	7-131	AB		B
"	8-107	AB		B
"	8-109	AB		B
"	8-110	AB		B
"	8-115	AB		B
"	8-116	AB		B
"	8-117	AB		B
"	8-118	AB		B
"	8-119	AB		B
"	8-120	AB		B
VS DTD114EK/-1	8-108	AC		B
VS2SA1037KR-1	8-113	AB		B
VS2SA1807-P-1	8-104	AE		B
VS2SC2412KR-1	8-111	AD		B
"	8-112	AD		B
"	8-114	AD		B
VS2SC2412KS-1	7-130	AB		B
"	10-5	AB		B
VS2SC4061K/-1	8-105	AC		B
"	8-106	AC		B
[X]				
XBBS030P06000	50-B4	AA		C
XBPS030P06K00	50-B14	AA		C
XBPS030P08000	50-B9	AA		C
XBPSN40P06K00	50-B5	AA		C
XEBSD30P06000	50-B6	AA		C
XEBSD30P08000	50-B7	AA		C
XEBSD30P10000	50-B13	AA		C
XEBSD30P12000	50-B15	AA		C
XEBSF30P08000	50-B8	AA		C
XJPSD30P04000	50-B11	AA		C
XRJSJ20-04000	50-W2	AA		C
XUBSD20P06000	50-B12	AA		C
XWHS030-08100	50-W1	AA		C
[0]				
0CBBFZ89154Z/	9-4	AC		C
0CBLRH0368ZQ/	9-64	AU	N	C
0CBMRZ0362ZZ/	9-65	AF		C
0CBMZ0610ZZ/	9-66	AL		C
0CBPCZ0084ZZ/	9-61	AD		C
0CBPCZ0193ZZ/	9-60	AF		C
0CBPEZ0055ZZ/	9-62	AD		C
0CBPJ CZ20037/	9-56	AG		A
0CBPJ T0115ZZ/	9-57	AF		A
0CBPKZ0194ZZ/	9-59	AC		C
0CBUAC0004DZ/	9-10	AC		B
0CBUAC0056BZ/	9-8	AD		B
0CBUAC0098EZ/	9-9	AK		B
0CBUAG0141AZ/	9-7	AR		B
0CBUBB0149DZ/	9-11	AH		B
0CBUBB0166BB/	9-16	AK		B
0CBUBC0182BL/	9-14	AE		B
0CBUBC0220BZ/	9-12	AD		B
0CBUBC0280BZ/	9-15	AC		B
0CBUBDAC270D/	9-17	AC		B
0CBUBDAE300D/	9-19	AD		B
0CBUBDBW3R6B/	9-18	AB		B
0CBUBDBW6R2C/	9-20	AB		B

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