FACSIMILE

RICOH K50 SERIES

FIELD SERVICE MANUAL

TABLE OF CONTENTS

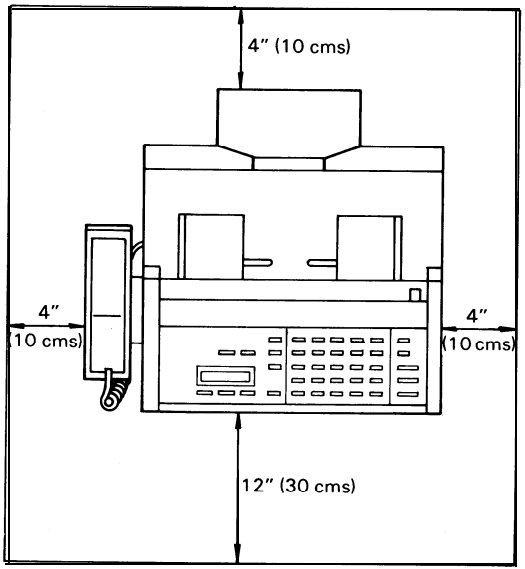
SECTION 1

UNPACKING

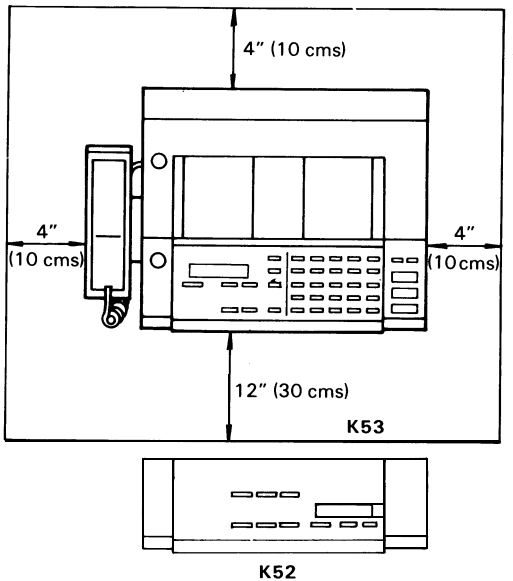
1-1 INSTALLATION REQUIREMENTS

Install in a place which satisfies the following:

- **Not exposed to direct sunlight**
- **Away from areas containing corrosive gas**
- **Well ventilated (air turnover at least three times per hour)**
- **Not subject to vibration**
- **Dust-free**
- **Condensation-free**
- **Temperature 63 to 82°F (17 to 28°C)**
- **Humidity 40 to 70%RH.**
- **Away from other electronic equipment, to avoid interference**
- **Away from heaters and air conditions, to avoid sudden changes of temperature**
- **With clearance as shown below**
  Kalle models have no handset; there should be 10 cms clearance at left side of machine.



K55



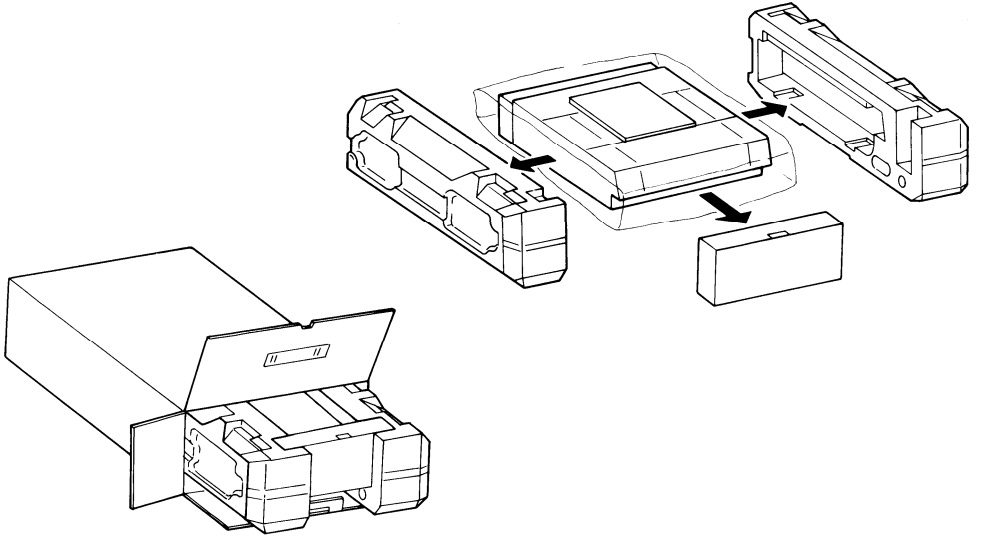
K53

K52

1-2 UNPACKING PROCEDURE

1. Pull the machine out of the carton, with the foam supports and package.

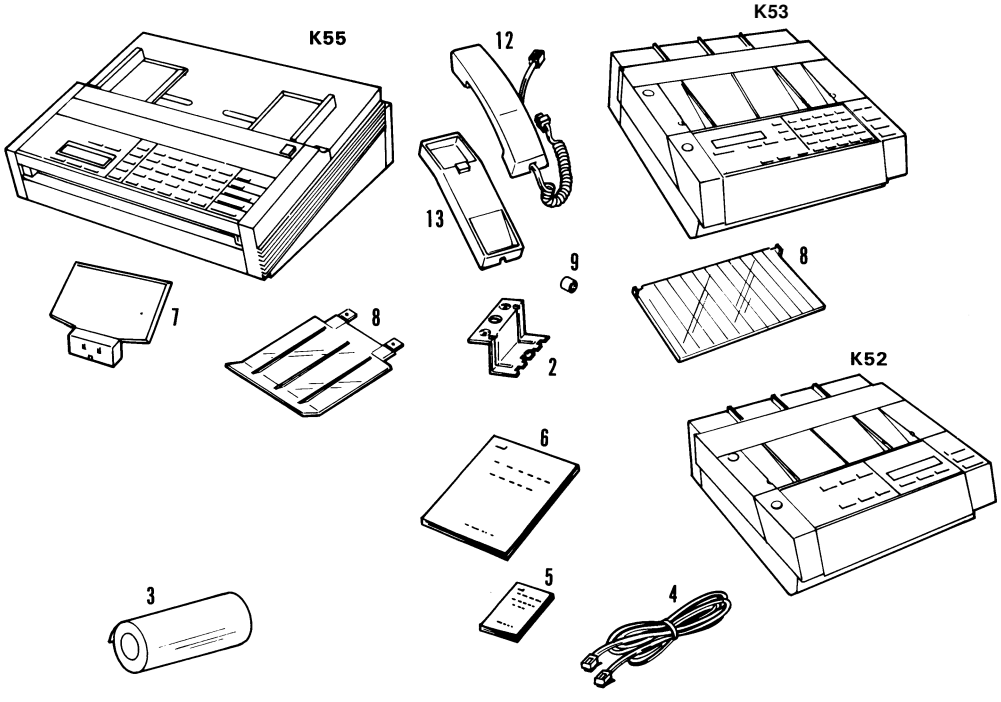
2. Remove the package, the foam supports, and the plastic bag from the machine.



1-3 ACCESSORIES CHECK LIST

	K52	K53	K55
1. Facsimile Terminal	1	1	1
2. Handset Stand Bracket	—	1	1
3. Thermal Paper	30m	30m	50m
4. Modular Cord (6P/8P Modular Cord)	1	1	1
5. Basic Operation Manual (A7 size)	1	1	1
6. Operation Manual	1	1	1
7. Sub Document Table	—	—	1
8. Desk Tray	1	1	1
9. Bushing-Handset	—	1	1
10. Address Card	—	1	1
11. Seal-Address Card	—	1	1
12. Handset	—	1	1
13. Stand - Handset	—	1	1
14. Paper Guide Plate	—	—	1
15. Knob - Paper Guide Plate	–	–	1

See diagram on the next page



Note: 2,4,9, 12 and 13 U.S.A. only

SECTION 2

INSTALLATION PROCEDURE

2-1 ASSEMBLY (U.S.A. only)

1. **Connect the telephone and the line. (Refer to Fig. 2-1)**

   1) Remove the jack cover (two screws).
   2) Connect the lines as shown in Fig. 2-1.
   3) Replace the terminal cover.

2. Install the handset. (Not required for Kane)

   1) Fit the handset stand to the handset stand bracket;
   i) **Insert the tabs on the bottom of the stand into the slots in the top of the bracket.**
   ii) **Push until the tabs snap into place.**

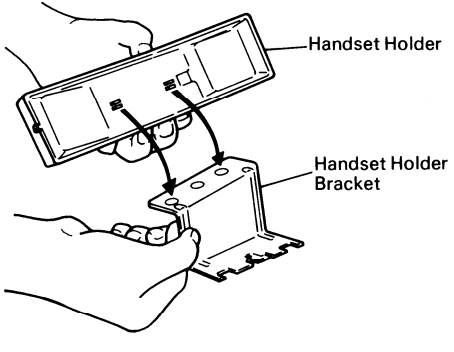
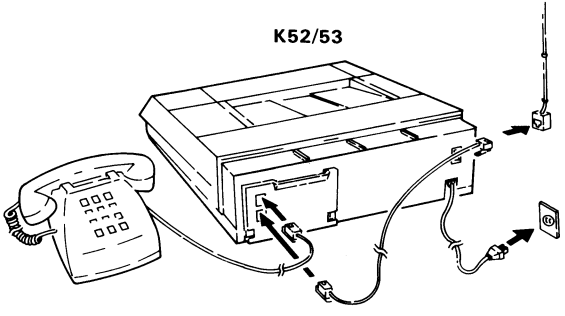


Fig. 2-2



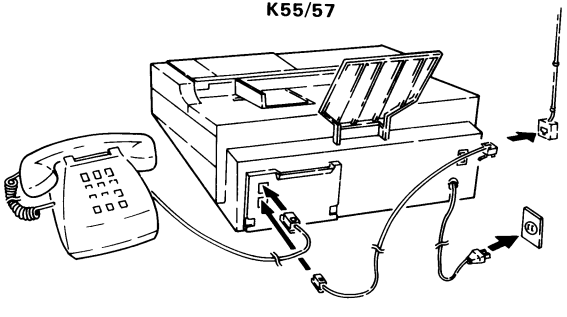


Fig. 2-1

2) Install the handset stand bracket on the left side of the machine. as shown.

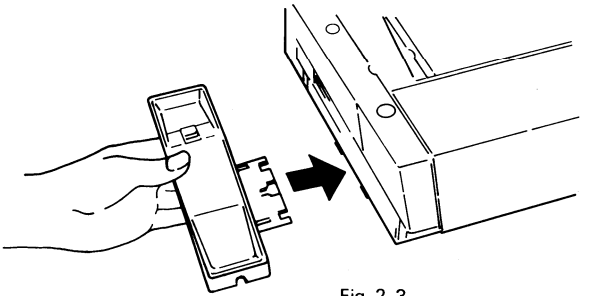


Fig. 2-3

3) Plug the handset jack into the left side of the machine, then place the handset on the handset stand.

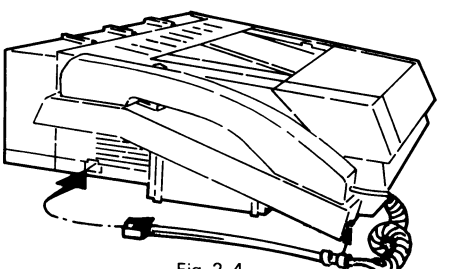
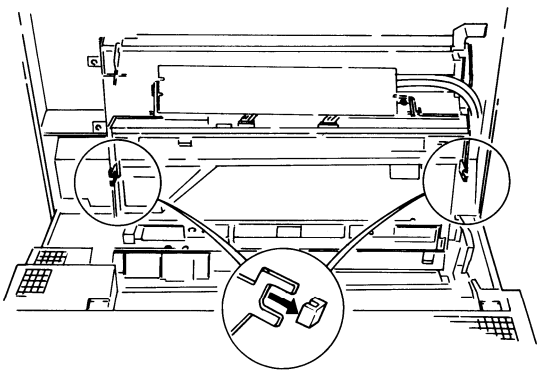


Fig. 2-4

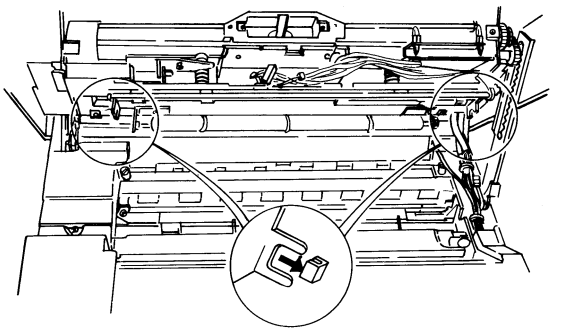
2-2 PAPER ROLL INSTALLATION

1. **Press the upper unit release button and open the upper unit until it locks.**

2. **Remove the thermal head spacers from the thermal head bracket, as shown in Fig. 2-5.**



K52/53

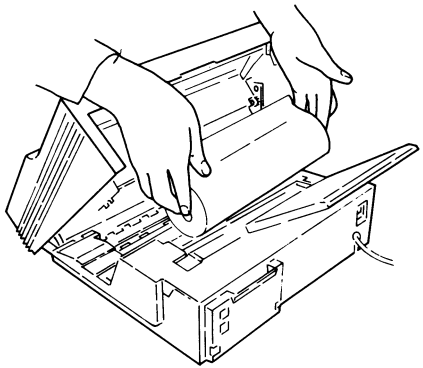


K55/57

Fig. 2-5

3. Set the thermal paper in the machine with the leading edge feeding from the rear of the machine, as shown in Fig. 2-6.

K52/53



K55/57

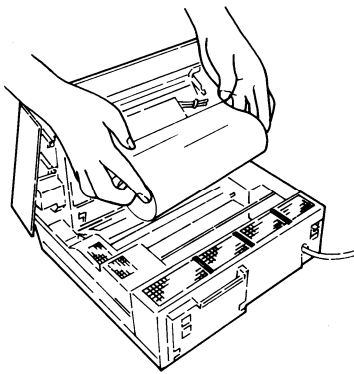


Fig. 2-6

4. **Pull out the leading edge about 8 ins. (20 ems) and insert it between the guide plates in front of the platen roller, as shown in Fig. 2-7.**

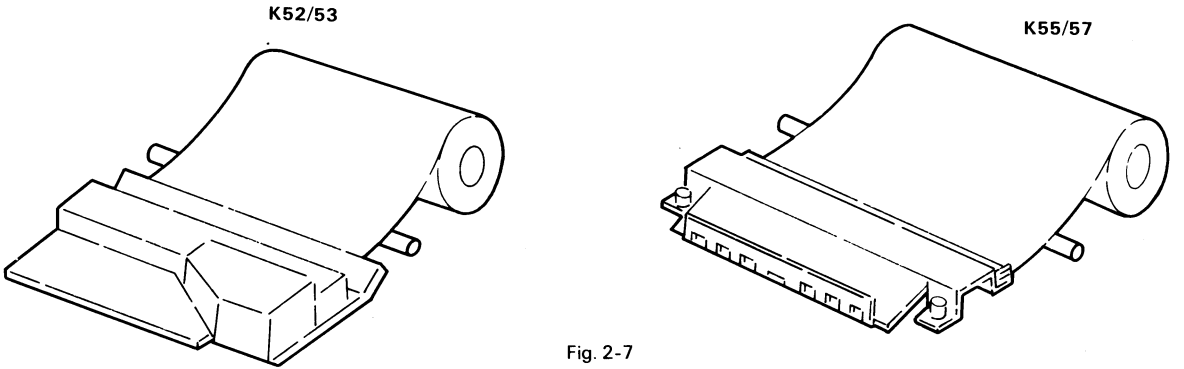


Fig. 2-7

5. Close the upper unit. Ensure that the upper unit is locked properly.

6. Copy a test sheet and check the copy quality

2-3 POWER CONNECTION

1. **Connect the power cord to a 115V 50/60Hz power source capable of supplying more than 10A.**

2. **Voltage must not fluctuate more than 10%.**

3. **Make sure that the plug is firmly inserted into the outlet.**

4. **A dedicated circuit is recommended.**

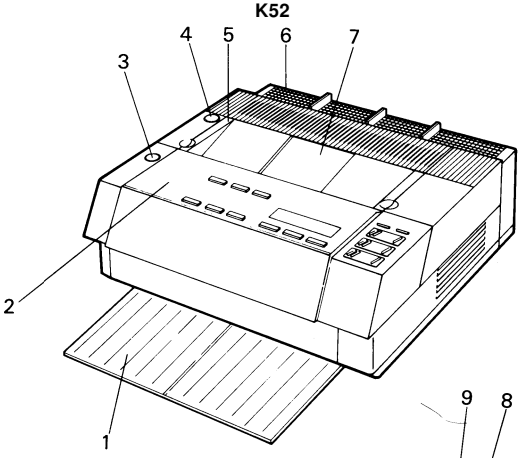
5. **Ground the facsimile machine properly to prevent accidents. Do not ground to a gas line.**

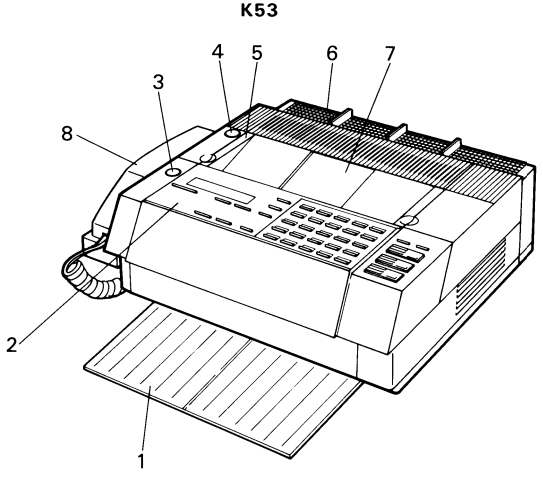
SECTION 3

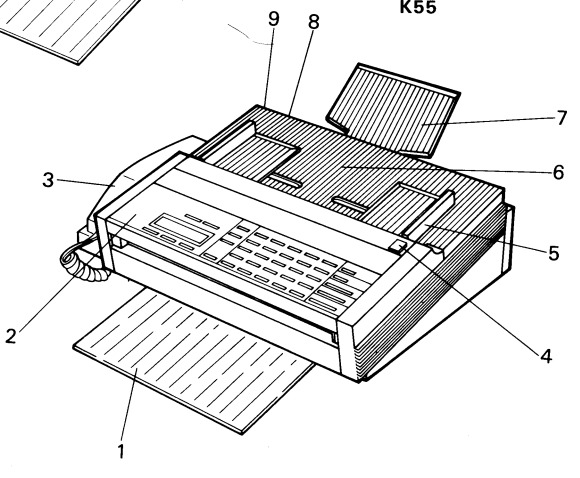
COMPONENT GUIDE

3–1 EXTERNAL

– Guide to Components (K52/53/55) –





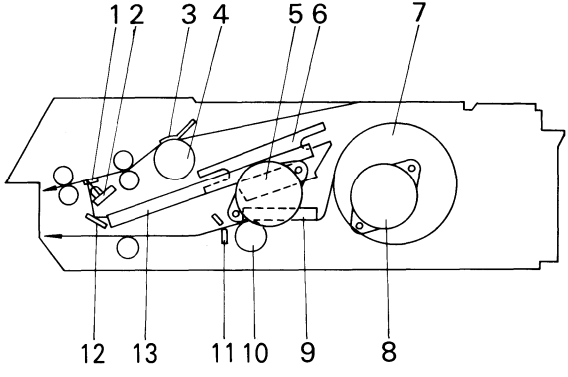


No.	Name	Function
1	Desk Tray	Documents and printed paper are stacked here after communication.
2	Operation Panel	Contains keys and indicators.
3	ADF Release Button	Use to open the ADF.
4	Upper Unit Release Button	Use to open the upper unit.
5	Document Guide	Guides the document into the ADF.
6	Power Switch	Use to turn the power ON/OFF.
7	Document Table	Set documents for transmission here.
8	Handset (K53 only)	Use for conversation and Voice ID storage. Not supplied with European models.

No.	Name	Function
1	Desk Tray	Documents and printed paper are stacked here after communication.
2	Operation Panel	Contains keys and indicators.
3	Handset	Use for conversation and Voice ID storage. Not supplied with European models.
4	ADF Release Button	Use to open the ADF.
5	Document Guide	Guides the document into the ADF.
6	Document Table	Set documents for transmission here.
7	Sub document Table	Supports long documents.
8	Power Switch	Use to turn the power ON/OFF.
9	Upper Unit Release Button	Use to open the upper unit.

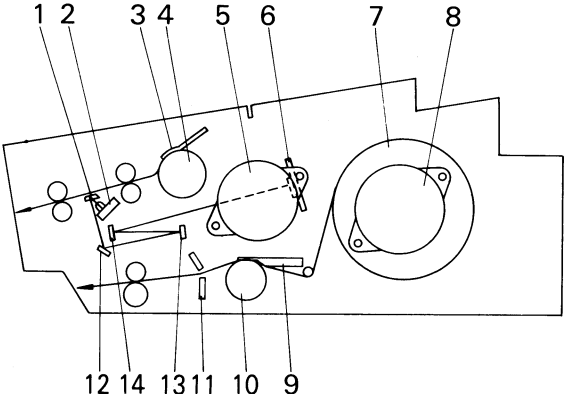
3-2 INTERNAL

- Optical and Mechanical Components (K52/53) –



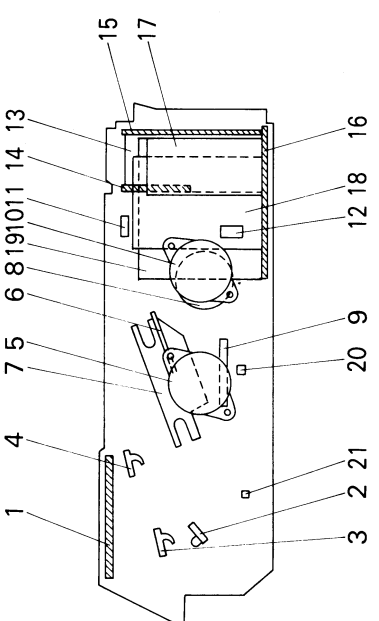
No.	Name	Function
1	Exposure Glass	Exposes the document to the scanner.
2	LED Array	Illuminates the document.
3	Separation Rubber Plate	Allows only one document to pass.
4	Separation Roller	Feeds and separates documents.

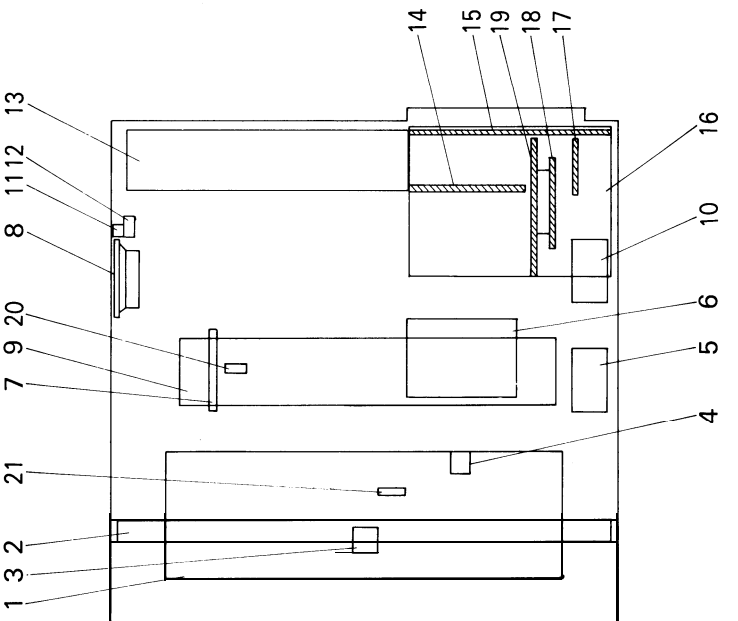
No.	Name	Function
5	Tx Motor	Drives the ADF and the scanner.
6	SBU	Contains the CCD, which converts optical images into an analog signal.
7	Paper Roll	Thermosensitive paper
8	Rx Motor	Drives printer paper feed mechanisms.
9	Thermal Head	Prints on the thermal paper.
10	Platen Roller	Feeds printer paper.
11	Cutter	Contains the cutter motor and cuts the thermal paper.
12	First Mirror	Reflects light from the document to the SBU.
13	Second Mirror	As above.



No.	Name	Function
1	Exposure Glass	Exposes the document to the scanner.
2	LED Array	Illuminates the document.
3	Separation Rubber Plate	Allows only one document to pass.

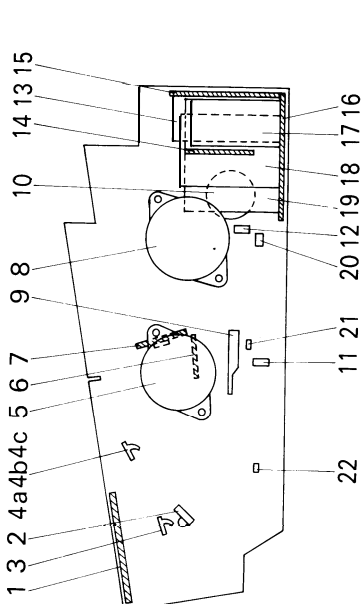
No.	Name	Function
4	Separation Roller	Feeds and separates documents.
5	Tx Motor	Drives the ADF and the scanner.
6	SBU	Contains the CCD, which converts optical images into an analog signal.
7	Paper Roll	Thermosensitive paper
8	Rx Motor	Drives printer paper feed mechanisms.
9	Thermal Head	Prints on the thermal paper.
10	Platen Roller	Feeds printer paper.
11	Cutter	Contains the cutter motor and cuts the thermal paper.
12	First Mirror	Reflects light from the document to the SBU.
13	Second Mirror	As above.
14	Third Mirror	As above.

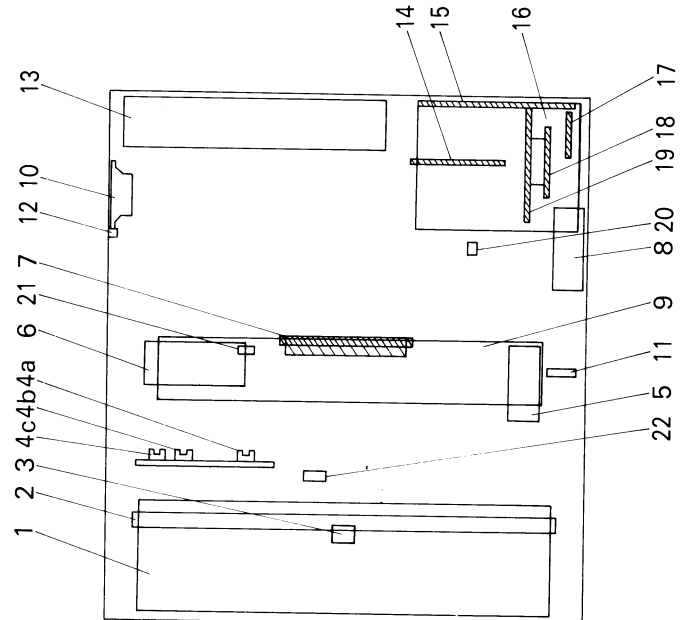

15
17
13
14
11
19
10
8
6
7
5
4
1
16
18
12
9
20
21
2
3


14
15
19
18
17
13
11
12
8
20
9
7
21
2
3
1
16
10
6
5
4

No.	Name	Function
1	OPU	Drives the operation and display panels.
2	LED Array	Illuminates the document
3	Scan Line Sensor (SB-2)	Detects when a document is set at the scan line.
4	Document Sensor (SB-1)	Detects when a document is set in the ADF.
5	Tx Motor	Drives the ADF and the scanner.
6	VPU	Processes video signals from the SBU.
7	SBU	Converts optical images into an analog signal.
8	Monitor Speaker (K53 only)	Monitors the telephone line.
9	Thermal Head	Prints on the thermal paper.
10	Rx Motor	Drives printer paper feed mechanism.
11	Upper Unit Sensor (SB-10)	Detects when the upper unit is open and cuts off the main power.
12	Handset Jack	Jack for connecting the handset. (Not used in Kalle models.)

No.	Name	Function
13	PSU	Supplies power to all parts.
14	FPD	Drives the Tx motor, Rx motor and cutter motor.
15	NCU	Controls the communication system.
16	FCU	Controls the system.
17	MBU	Contains the programmed ROMs for system control.
18	MIF	Interface board between modem and FCU.
19	Modem	Modulates and demodulates.
20	Paper End Sensor (SB-4)	Detects when the paper roll has run out.
21	Printer Jam Sensor (SB-5)	Detects post-cutter jam.


1 3 2 4a 4b 4c 5 6 7 9 8 10 14 13 15 16 17 18 19 12 20 21 11 22


1 2 3 4c 4b 4a 6 21 7 13 12 10 14 15 16 17 18 19 20 8 9 11 5 22

No.	Name	Function
1	OPU	Drives the operation and display panels.
2	LED Array	Illuminates the document.
3	Scan Line Sensor (SB-2)	Detects when a document is set at the scan line.
4a	Document Sensor (SB-I)	Detects when a document is set in the ADF.
4b 4C	Document Width Sensor (SB-3)	These two photocoupler switches detect B4 and A3 width documents.
5	Tx Motor	Drives the ADF and the scanner.
6	VPU	Processes video signals from the SBU.
7	SBU	Converts optical images into an analog signal
8	Rx Motor	Drives printer paper feed mechanism.
9	Thermal Head	Prints on the thermal paper.
10	Monitor Speaker	Monitors the telephone line.
11	Upper Unit Sensor (SB-10)	Detects when the upper unit is open and cuts off the main power.

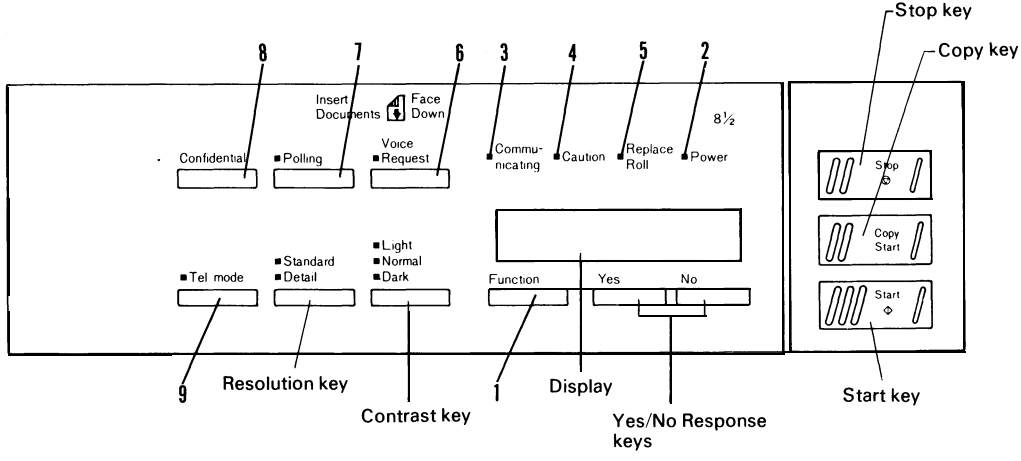
No.	Name	Function
12	Handset Jack	Jack for connecting the handset. (Not used in Kane models.)
13	P S U	Supplies power to all parts.
14	F P D	Drives Tx motor, Rx motor and cutter motor.
15	N C U	Controls the communication system.
16	F C U	Controls the system
17	M B U	Contains the programmed ROMs for system control.
18	MIF	Interface board between modem and FCU.
19	M o d e m	Modulates and demodulates.
20	Paper Width Sensor (SB-6)	Detects the width of printer paper installed in the machine.
21	Paper End Sensor (SB-4)	Detects when the paper roll has run out.
22	Printer Jam Sensor (SB-5)	Detects post-cutter jam.

SECTION 4

PROGRAMMING AND TESTING

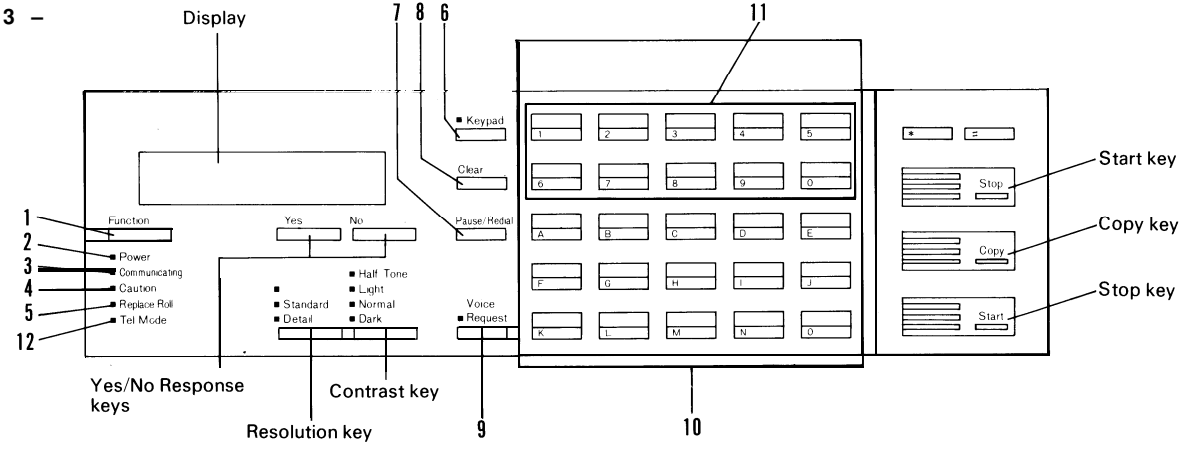
4-1 OPERATION PANEL

– K52 –



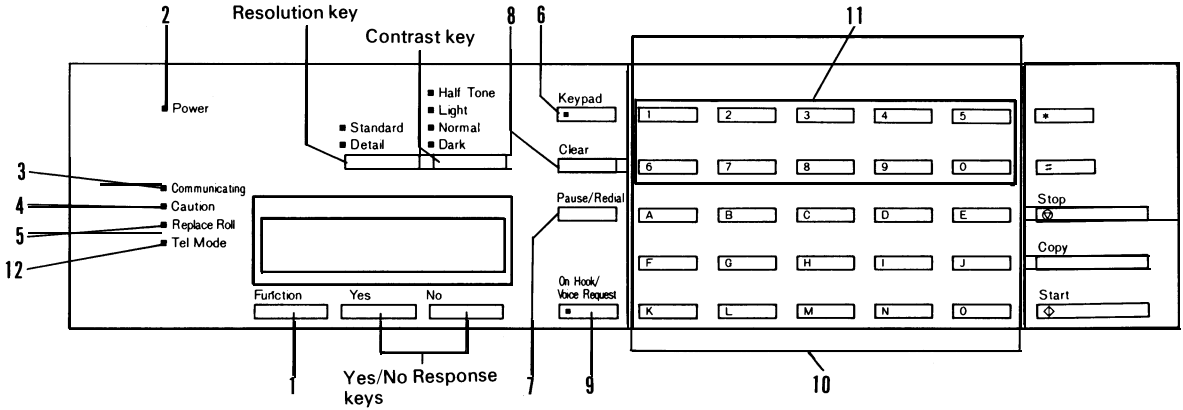
No.	Name	Function
1.	Function Key	Press to enter the programming mode.
2.	Power Indicator	Lights when the mains power is on.
3.	Communicating Indicator	Lights during communication.

No.	Name	Function
4.	Caution Indicator	Lights when a transmission failure, document misfeed or copy misfeed occurs.
5.	Roll Empty Indicator	Blinks when the roll is almost empty and remains on when empty.
6.	Voice Request Key	Push to make a voice request
7.	Polling Key	Push to make a polling reception.
8.	Confidential Key	Push to make a confidential transmission.
9.	Tel Mode Key	Push to enter TEL mode.



No.	Name	Function
1.	**Function Key**	**Press to enter the programming mode.**
2.	**Power Indicator**	**Lights when the mains power is on.**
3.	**Communicating Indicator**	**Lights during communication.**
4.	**Caution Indicator**	**Lights when a transmission failure, document misfeed or copy misfeed occurs.**

No.	Name	Function
5.	Roll Empty Indicator	Blinks when the roll is almost empty and remains on when empty.
6.	Keypad Key	Push to enable or disable the numeric keypad section of the one-touch keys.
7.	Pause/RedialKey	i) Push to insert a pause in the telephone number. ii) Push to redial the remote terminal immediately.
8.	Clear Key	Push to clear the previously entered character, or use as a cursor.
9.	Voice Request/On-hook Dial Key	Push to make a voice request during communication. Push to make a telephone call during standby.
10.	One-touch Keys	Use to input a single address or a sequence of options, settings and address, with one-touch.
11.	Keypad	This zone of the one-touch keypad acts as a numeric keypad when the Keypad key is pressed.
12.	Tel Mode Indicator	Lights when the K53 is in TEL mode.



No.	Name	Function
1.	Function Key	Press to enter the programming mode.
2.	Power Indicator	Lights when the mains power is on.
3.	Communicating Indicator	Lights during communication.
4.	Caution Indicator	Lights when a transmission failure, document misfeed or copy misfeed occurs.

No.	Name	Function
5.	Roll Empty Indicator	Blinks when the roll is almost empty and remains on when empty.
6.	Keypad Key	Push to enable or disable the numeric keypad section of the one-touch keys.
7.	Pause/RedialKey	i) Push to insert a pause in the telephone number. ii) Push to redial the remote terminal immediately.
8.	Clear Key	Push to clear the previously entered character, or use as a cursor.
9.	Voice Request/On-hook Dial Key	Push to make a voice request during communication. Push to make a telephone call during standby.
10.	One-touch Keys	Use to input a single address or a sequence of options, settings and address, with one-touch.
11.	Keypad	This zone of the one-touch keypad acts as a numeric keypad when the Keypad key is pressed.
12.	Tel Mode Indicator	Lights when the K55 is in TEL mode.

4-2 PROGRAMMING

The following items should be programmed or registered before starting operation. If these items are not set, K52, K53 and K55 will not function at optimum potential.

– K52/53/55 –

- **RTI/TTI/CSI**
- **Polling ID code**
- **Date and time**

K53/55 –

- **One-touch Keys**
  a) Keystroke programs (K53 – up to 5, K55 – up to 10)
  b) Quick-dial keys (any number of vacant keys)

- **Shorthand numbers – up to 90**
- **Groups**
- **Local terminal telephone number**
- **FAX/TEL setting**
- **Local terminal telephone type**
- **Refer to the Operation Manual for details.**

4-3 SERVICE MODE

1. **Entering and Exiting the Service Mode**

– K52 –

Kane models – Short JP 12 on the NCU.

Hold down the Stop key and switch the power on. Then hold down the Function key until "DISPLAY BIT SW" is displayed as shown below.

Note: Wait 10 seconds before turning power back on due to possible damage to the PSU.

TX: 234567 RX: 234567

DISPLAY BITSW? Y/N

After executing the required functions, switch the power off and on to exit the service mode. (Kane – also remove JP12 from the NCU.)

– K53/55/57 –

Method 1 – Hold down the Stop key and switch the power on.

Note: Wait 10 seconds before turning power back on due to possible damage to the PSU.

Method 2 – With the power on, simultaneously press 1,2,3,4, and 5.

Kane models – before using method 1 or 2, short JP12 on the NCU.

After executing the required functions, exit the service mode in one of the following ways.

1. **Switch the power off and on.**
   CAUTION: This will erase SAF files (K57) and Voice ID (USA models).
2. **Change bit 7 of the data in RAM address 00B2 to 0 (using mode 91).**
   The RAM data is displayed in hex code. Change the left-hand digit as shown on next page. Do not change the right-hand digit.

Before Changing	Change To
8x	ox
9x	1x
Ax	2x
Bx	3x

Before Changing	Change To
Cx	4x
Dx	5x
Ex	6x
Fx	7x

x= Don't care.
Then, press the Function Key.

3. Europe – remove JP12 on the NCU.

2. Function Tables

– K52 –

Each function is accessed by pushing a sequence of keys.

Keys	Function	Remarks
F,Y	Bit switch programming	
F,N,Y	ROM + RAM display, RAM rewriting	Local terminal only
F,2 x N,Y	CCITT and Maker code programming	CCITT = 0000 Maker = 25
F,3 x N,Y	Thermal head parameter programming	Enter the size and pulse width
F,4 x N,Y	Error code display	
F,5 x N,Y	Service report output	
F,6 x N,Y	System report	
F,7 x N,Y	ROM + RAM printout	
F,8 x N,Y	NCU parameter programming	

F = Function key (hold down for about 3 seconds)
N = No key
Y = Yes key

For example: F, 5 x N, Y means press the Function key, then No five times, then Yes.

Each service function has a number.

Function Number	Function	Remarks
90	Bit SW programming	
91	ROM, RAM display, RAM rewriting	Local terminal only
92	System Report	
93	ROM, RAM data printout	
94	Error code display	
95	Service Report	
96	CCITT and Maker code programming	CCITT = 0000 Maker = 25
97	Thermal head parameter programming	Enter the size and the pulse width
98	NCU parameter programming	
99	Maximum address limitation	Europe only

3. Operation Procedures

For each procedure, two columns are given. Unless stated otherwise, the instructions for K53/5/7 are the same as for K52.

1) Bit Switch Programming

CAUTION: Refer to appendix A (Bit switch functions) and consult a senior technician before changing any setting.

1. **– K52 –**
   Hold down the Function key until "DISPLAY BITSW? Y/N"is displayed.

   – K53/55/57 –
   Press the Function key and enter 90 at the keypad.

   ```
   MODE NO. 90      Y/N
   DISPLAY BITSW?
   ```

2. Press Yes.
   The first line indicates the factory settings; the second line indicates the present settings.

   ```
   DEFAULT: 00000000
   BITSW 0: 00000000
   ```

3. Make your changes.

   – K52 –
   * Use the No key to increment the bit switch number.
   * Use the Yes key as a cursor, then change the setting of the bit at the cursor with the No key.

   – K53/55/57 –
   * Press # to increment the bit switch number; press * to decrement. Hold down #/* for fast increment/decrement.
     Example: Press # once.

DEFAULT: 00000000
BITSW 1: 00010000

* Press the numeric keypad key corresponding to the bit that you want to change. Bits are numbered from 7 at the left to O at the right.
Example: Change bit O to 1.
Press O.

DEFAULT: 00000000
BITSW 1: 00010001

4.

Either:
Change more bit switches using step 3.
(K52 - first, move the cursor to the BITSW number.)
Or:

– K52 only –
* Press Stop to go on to the ROM/RAM display function, step 2.

DISPLAY ROM, RAM? Y/N

* Press Stop, then press No repeatedly until the required function is accessed.
Or:
Press the Function key to return to standby.

READY 10:00
SET DOCUMENT

2) ROM and RAM display, RAM rewriting

Consult a senior technician before changing any RAM data.

1. **– K52 –**

   When "DISPLAY BITSW? Y/N" is displayed, press No.

   DISPLAY ROM,RAM? Y/N

   – K53/55/57 –

   Press the Function key and enter 91.

   MODE NO. 91
   DISPLAY ROM, RAM? Y/N

2. **Press Yes.**

   ADDRESS = 0000
   DATA = 23

3. **Select the address.**

   * **Use the Yes key as a cursor.**
   * **Use the No key to increment the character at the cursor.**

   * **Use the Clear key as a cursor.**
   * **Use # to increment the cursor character.**
   * **Use the * key to decrement.**

   Note: In K53/55/57 you can enter the address and data directly at the keypad.

4. Move the cursor on to the data.
   Change the data, if required, using the same method as for step 3.
   The machine automatically prevents you from changing ROM areas.

5. Either:
   Change more addresses; go back to step 3
   Or:
   Press the Function key to return to standby
   Or: – K52 only –
   * Press the Stop key to go on to the next function (CCITT/Maker code programming), step 2.
   * Press the Stop key, then press No repeatedly until the required function is accessed.

SET CCITT, MAKER? Y/N

Useful RAM Addresses

Contrast Thresholds	**Dark**	**14E6**
	Normal	**14E7**
	Light	**14E8**
Sensor Thresholds	**SB-4 in standby mode**	**1522 (40%)**
	SB-4 during printing	**1521 (50%)**
	SB-5	**1523**
Current Sensor Values	**SB-4**	**151F**
	SB-5	**152O**
Number of Redials	**7079**	
Redialing Interval	**707A**	
Near-end Counter	**00EB, 00EC, 00ED**	

e.g.; K50 default = 50 m

Default counter value = 0546F7 in units of 0.13 mm

00EB	**00EC**	**00ED**
F7	**46**	**05**

3) CCITT and Maker Codes

1. **– K52 –**
   When "DISPLAY BITSW? Y/N" is displayed, press No twice.

   SET CCITT, MAKER? Y/N

   – K53/55/57 –
   Press the Function key and enter 96.

   MODE NO. 96 Y/N
   SET CCITT, MAKER?

2. **Press Yes.**

   CCITT MAKER
   0001 25

3. **Enter the correct codes.**

   CCITT = 0000; MAKER = 25

   – K52 –
   Use the No key to increment and shift the cursor with Yes.

   CCITT MAKER
   0000 25

   – K53/55/57 –
   Enter the correct codes at the keypad.

   CCITT MAKER
   0000 25

If incorrect codes are programmed, communication using NSF(S) is disabled, including confidential transmission.

4. Press the Function key to return to standby

   Or: – K52 only –

   * Press Stop to go on to program thermal head parameters (from step 2)

   * Press Stop then press No repeatedly until the required function is accessed.

SET PULSE WIDTH? Y/N

4) Thermal Head Parameters

Do this function immediately after changing the thermal head or MBU.

1. **– K52 –**
   When "DISPLAY BITSW? Y/N" is displayed, press No three times.

   SET PULSE WIDTH? Y/N

   – K53/55/57 –
   Press the Function key and enter 97.

   MODE NO. 97
   SET PULSE WIDTH? Y/N

2. **Press Yes.**

   PULSE WIDTH HEAD
   0.30MS B

3. **Enter the pulse width shown on the thermal head (e.g., 0.45 ins), then enter the thermal head width (e.g., A width)**

   PULSE WIDTH HEAD
   0.45MS A

   – K52 –
   Use the No key to increment the character at the cursor, and use the Yes key as a cursor.

   – K53/55/57 –
   Enter values directly at the keypad.

4. Press the Function key to return to standby.
   Or: – K52 only –
   * Press the Stop key to go on to error code display (from step 2).
   * Press Stop, then press No repeatedly until the required function is accessed.

DISPLAY ERROR CODE? Y/N

5) Error Code Display

This displays the most recent 32 error codes. All types of error are included.

1. – K52 –
   When "DISPLAY BITSW? Y/N" is displayed, press No four times.

   DISPLAY ERROR CODE? Y/N

   – K53/55/57 –
   Press the Function key and enter 94.

   MODE NO. 94
   DISPLAY ERROR CODE? Y/N

2. Press Yes.

   ERROR CODE
   1-01,1-02,2-03,2-02

3. Either:
   Press Yes (K52) or# (K53/55/57) to display the next four codes.

   Note: If Yes/# is pressed more than 7 times, the machine returns to standby.

   Or:
   Press Stop (K52) or No (K53/55/57) to go on to print the service report (from step 2).
   Or:
   Press the Function key to return to standby.
   Or: – K52 only –
   Press Stop then press No repeatedly until the required function is accessed.

6) Service Report

1. – K52 –
   When "DISPLAY BITSW? Y/N" is displayed, press No five times.

   FOR SERVICE REPORT COPY/N

   – K53/55/57 –
   Press the Function key and enter 95.

   MODE NO. 95 COPY? Y/N
   FOR SERVICE REPORT

2. Press Copy.
   The machine automatically returns to standby.

   PRINT SERV. REPORT

SERVICE REPORT

:RICOH TEC. SECTION (DEC.04 '86 15:55)

DATE	START TIME	REMOTE TERMINAL IDENTIFICATION	MODE	ERROR CODE(S)	DEPT. CODE(NotinK52)
DEC.02	14:30	RICOH FACSIMILE QA	G3DR	0-23,	
	18:33	RICOH 882-2176	G3ST	0-07,	
DEC.03	13:39	RICOH SVC O'SEAS	G3DT$	0-07,	
	14:10	WYWY MALAYSIA	G3ST	0-08,	0006

ERROR CODE LIST

1-21	0-08	0-07	0-00	0-00	0-00
0-07	1-21	1-21	1-21	0-04	0-01
0-00	0-00	0-00	0-00	0-00	0-00
0-00	1-21	1-21	0-23	1-21	0-62
1-10	1-21	0-06	1-71	1-71	1-71
1-71	1-20				

The Error Code column lists communication errors.
The Error Code List area gives all types of error codes (the most recent32 codes only).

7) System Report

This report lists counter totals, programmed parameters, ID codes and other items

1. **– K52 –**
   When "DISPLAY BITSW? Y/N" is displayed, press No six times.

   FOR SYSTEM REPORT COPY/N

   – K53/55/57 –
   Press the Function key and enter 92.

   MODE NO. 92 COPY/N
   FOR SYSTEM REPORT

2. **Press the Copy key to print the report.**

   PRINT SYSTEM REPORT

8) ROM and RAM Printout

1. **– K52 –**
   When "DISPLAY BITSW? Y/N" is displayed, press No seven times.

   PRINT ROM, RAM DATA? Y/N

   – K53/55/57 –
   Press the Function key and enter 93.

   MODE NO. 93
   PRINT ROM, RAM DATA? Y/N

2. **Press Yes.**

   Y: CUR./N: INC./COPY
   START =0000 END =0000

   PRINT DATA COPY/N
   START =0000, END =0000

3. **Enter the start and end addresses.**

   – K52 –

   *** Use the Yes key as a cursor.**
   *** Use the No key to increment.**
   Example: 0000,0030

   Y: CUR./N: INC./COPY
   START =0000 END =0030

   – K53/55/57 –

   Enter the addresses at the keypad.
   Example: 1230, 123F

   PRINT DATA COPY/N
   START =0000, END =0030

4. **Press Copy.**

   PRINT ROM, RAM DATA

9) NCU Parameter Programming

Consult a senior technician before adjusting any of these parameters.

1. **– K52 –**
   When "DISPLAY BITSW? Y/N" is displayed, press No eight times.

   SET NCU PARAMETER? Y/N

   – K53/55/57 –
   Press the Function key and enter 98.

   MODE NO. 98
   SET NCU PARAMETER? Y/N

2. **Press Yes.**

   Y: CURSOR N: INCREMENT
   NO.0 068

   NCU PARAMETER KPAD/Y
   NO.00 070

3. **Either:**
   Change the value of the displayed parameter, if required. See page 4-28.

– K52 –

Press Yes to shift the cursor, then press No to increment the character at the cursor.

```
Y:  CURSOR    N:  INCREMENT
    NO.0          075
```

Or:

Go to step 4.

– K53/55/57 –

Enter the new value at the keypad.

```
NCU PARAMETER          KPAD/Y
NO.00    075
```

4. Goon to change another parameter.

– K52 –

Make sure that the cursor is at the parameter number. Then press No until the desired parameter number is displayed.

```
Y:  CURSOR    N:  INCREMENT
    NO.5          010
```

– K53/55/57 –

Press Yes until the desired parameter is displayed.

```
NCU PARAMETER          KPAD/Y
NO.01    070
```

5. Press the Function key to return to standby after finishing.

A table of parameters follows.

Parameter No.	Description	Formula	Factory Setting	Remarks
00	Acceptable ringing signal wave frequency : Range 1, lower limit	$\frac{1}{Nx655x10^{-6}(HZ)}$	64	
01	Acceptable ringing signal wave frequency : Range 1, upper limit	$\frac{1}{Nx655x10^{-6}(HZ)}$	127	
02	Acceptable ringing signal wave frequency : Range 2, lower limit	$\frac{1}{Nx655x10^{-6}(HZ)}$	26	
03	Acceptable ringing signal wave frequency : Range 2, upper limit	$\frac{1}{Nx655x10^{-6}(HZ)}$	67	
04	Number of rings until a call is deteced.	N (times)	1	
05	Undetected part of the first ring	N x 20 (ms)	10	Note 3
06	Undetected part of the second and subsequent rings	N x 20 (ms)	10	
07	Reset time	N x 40 (ms)	150	
08	Time between the closing of relay DS and the opening of relay DI (T0)	N x 1 (ms)	255	Notes 1,2
09	Time that relay DI is open. (T1)	N x 1 (ms)	67	Note 1
10	Time that relay DI is closed. (T2)	N x 1 (ms)	33	Note 1
11	Time between the final closure of relay DI and the opening of relay DS. (T3)	N x 1 (ms)	50	Notes 1,2

Parameter No.	Description	Formula	Factory Setting	Remarks
12	Time until the next dial pulse is transmitted (pause between dials, the time until DI relay is opened after DS relay is opened). (T4)	N x 20 (ms)	33	Notes 1,2
13	Time waited when a pause is input.	N x 20 (ms)	33	
14	DTMF tone on time (D0)	N x 1 (ms)	100	
15	DTMF tone off time (D1)	N x 1 (ms)	100	
16	DTMF tone transmission level	– (15 – N)	13	Note 4

Notes:

1. The above pulse dialing times (T0, T1, T2, T3) are the values for 10 pps. Times for 20 pps are half those for 10 pps.

2. DS relay control should be done for the Europe type NCU which has a ground start selection.

3. The first ring may not be detected until Parameter 05 + Ringing Signal wavelength X (1 to 2.5).

4. N must be between 0 and 15. (Decimal value)

4. Test Mode

The K50 series has the following function tests.

* Modem test (G3 and G2 signal transmission)
* Operation panel test
* LED array lighting (for scanner adjustments)
* Sensor threshold initialization
* Tone transmission (DTMF and pulse signals)

The tone transmission test is not available on K52, as it has no auto-dialing.

1) Entering the Test Mode

1. K57 only – Print out all stored files.
2. Kane – short JP12 on the NCU.
3. Hold down the Stop key, wait 10 seconds, and switch the power on.
4. When "ENABLE SERVICE FUNC." is displayed, press the Start key immediately. The following will appear.

   DENSITY: MDM, LCD, LAMP
   VOICE: SEN; TEL: DTMF

5. Make the required tests.
   The tests are selected by lighting LEDs on the operation panel. If more than one LED is lit, the priority is: Keypad > Voice Request > Contrast.

After testing:

- **Switch the power off and on.**
  Note: Wait 10 seconds before turning power back on due to possible damage to the PSU.
- **Kane — remove JP12 on the NCU.**
- **USA (except K52) — instruct user to reprogram Voice ID.**

2) Modem Test

1. **Make sure that the Keypad and Voice Request LEDs are off.**

2. **Select "Normal" contrast, then push Start. The unit will go into the off-hook mode**

   MODEM TEST

3. **Press the required keys to test the desired signal (refer to the following table)**
   Example: 9600 bps

   MODEM TEST
   9600 BPS

   Note: The machine will return to standby after 8 minutes of testing any one tone.

4. **Press Stop to return to step 3.**

   MODEM TEST

5. **Press Stop once more to return to standby.**

Signal	Operation
9600 bps	Light the "Tel Mode" LED (K52) or the "Keypad" LED (K53/5/7), then press Start.
7200 bps	Select "Detail" resolution, then press Start.
4800 bps	Select "Dark" contrast, then press Start.
2400 bps	Select "Normal" contrast, then press Start.
300 bps	Select "Light" contrast, then press Start.
2100 Hz (CED)	Select "Light" contrast, then press Copy
1850 Hz	Select "Normal" contrast, then press Copy.
1650 Hz	Select "Dark" contrast, then press Copy.
1100 Hz	Select "Detail" resolution, then press Copy.
462 Hz	Light the "Tel Mode" LED (K52) or the "Keypad" LED (K53/5/7), then press Copy.
2100 Hz (G2 video signal)	Light the "Voice Request" LED, and press Copy.

If more than one LED is lit, the priority is as follows.

Keypad or Tel Mode > Voice Request > Detail > Contrast

3) Operation Panel Test

1. Make sure that the Keypad and Voice Request LEDs are off.
2. Select “Dark” contrast then press Start. The LEDs should be lit, except for following indicators, which should be blinking.
   K52: Tel mode, Caution, Resolution LEDs
   K53/5/7: Replace Roll, Caution

   LCD ALL DISPLAY
3. Press the Stop key to return to standby.

4) LED Array Lighting

1. Make sure that the Keypad and Voice Request LEDs are off.
2. Select “Light” contrast, then press the Start key.
   The LED array will light. It will remain lit for 8 minutes.

   LED LAMP ON
3. Press Stop to return to standby.

5) Sensor Threshold Initialization

1. Make sure that SB-4 and SB-5 are covered with paper and make sure that the Keypad LED is not lit.

2. Press the Voice Request key, then the Start key.

3. If a sensor is faulty, “NG” will be displayed followed by the faulty sensor.

6) Tone Tests (K53/5/7)

1. Press the Keypad key, then press Start.

DTMF TONE

2. Press the key corresponding to the desired tone (refer to the table given below).
Example: 697 Hz, push A

DTMF TONE 697HZ

Note: The machine will return to standby if no key is pushed for 8 minutes.

3. Press Stop after testing this tone.

4. Either:
   Return to standby – press Stop once more
   Or:
   Test another tone – go to step 2.

Tone	Operation
Dual tone 0	Push 0.
Dual tone 1	Push 1.
Dual tone 2	Push 2.
Dual tone 3	Push 3.
Dual tone 4	Push 4.
Dual tone 5	Push 5.
Dual tone 6	Push 6.
Dual tone 7	Push 7.
Dual tone 8	Push 8.
Dual tone 9	Push 9.
Dual tone *	Push *.
Dual tone #	Push #.

Tone	Operation
Single tone 697 Hz	Push A.
Single tone 770 Hz	Push B.
Single tone 852 Hz	Push C.
Single tone 941 Hz	Push D.
Single tone 1209 Hz	Push E.
Single tone 1336 Hz	Push F.
Single tone 1477 Hz	Push G.
Single tone 1633 Hz	Push H.

5. Printer Tests

It is not necessary to enter the Service Mode.

From standby:

* Simultaneously press the Copy key and a specified key, depending on the desired printout.

  Do not release the keys until the printer has started.

- Thin, closely spaced lines
  K52: Copy key + Voice Request
  K53/5/7: Copy key + 1

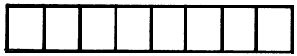
- Thick, vertical stripes
  K52: Copy key + Resolution key
  K53/5/7: Copy key + 2

- Pattern
  K52: Copy key + Yes
  K53/5/7: Copy key + 3

- Dense diagonal stripe pattern
  K52: Copy key + No
  K53/5/7: Copy key + 4

6. Dedicated Transmission Parameter Programming (K53/5/7only)

Each telephone number programmed as a One-touch key or Shorthand code has three bytes in RAM allocated for transmission parameters.



Byte 1

Initial modem rate (bps)
(0, 0) = 9600 (0, 1) = 7200
(1, 0) = 4800 (1, 1) = 2400

Transmission level
Example: (1, 1, 0, 0) = −12dB

Compression
0: MH/MR 1: MH

Byte 2

Program Enable/Disable
0: Transmissions to this remote terminal will use paramaters as specified by the bit switch settings.
1: The dedicated parameters in bytes 1 – 3 will be used.

Bit 0 DIS detection
0: First
1: Second (First DIS is ignored)

Bit 1
|
Bit 7 Not used (should be set at "0")

Byte 3 CCITT T1 time, in units of 2.56 seconds
Example: 60 seconds
60/2.56 = 24 approx
Byte 3 contains 18 (H) = 00011000

The required values must be entered using RAM R/W mode.

– RAM Addresses –

Code	Byte 1	Byte 2	Byte 3	Code	Byte 1	Byte 2	Byte 3
0(zero)	7850	7851	7852	10	789B	789C	789D
1	53	54	55	11	9E	9F	A0
2	56	57	58	12	A1	A2	A3
3	59	5A	5B	13	A4	A5	A6
4	5C	5D	5E	14	A7	A8	A9
5	5F	60	61	15	AA	AB	AC
6	62	63	64	16	AD	AE	AF
7	65	66	67	17	B0	B1	B2
8	68	69	6A	18	B3	B4	B5
9	6B	6C	6D	19	B6	B7	B8
A	6E	6F	70	20	B9	BA	BB
B	71	72	73	21	BC	BD	BE
c	74	75	76	22	BF	C0	C1
D	77	78	79	23	C2	C3	C4
E	7A	7B	7C	24	C5	C6	C7
F	7D	7E	7F	25	C8	C9	CA
G	80	81	82	26	CB	CC	CD
H	83	84	85	27	CE	CF	D0
I	86	87	88	28	D1	D2	D3
J	89	8A	8B	29	D4	D5	D6
K	8C	8D	8E	30	D7	D8	D9
L	8F	90	91	31	DA	DB	DC
M	92	93	94	32	DD	DE	DF
N	95	96	97	33	E0	E1	E2
O	98	99	9A	34	E3	E4	E5

Code	Byte 1	Byte 2	Byte 3	Code	Byte 1	Byte 2	Byte 3
35	78E6	78E7	78E8	61	7934	7935	7936
36	E9	EA	EB	62	37	38	39
37	EC	ED	EE	63	3A	3B	3C
38	EF	FO	F1	64	3D	3E	3F
39	F2	F3	F4	65	40	41	42
40	F5	F6	F7	66	43	44	45
41	F8	F9	FA	67	46	47	48
42	FB	FC	FD	68	49	4A	4B
43	FE	FF	7900	69	4C	4D	4E
44	7901	7902	03	70	4F	50	51
45	04	05	06	71	52	53	54
46	07	08	09	72	55	56	57
47	0A	0B	0C	73	58	59	5A
48	0D	0E	0F	74	5B	5C	5D
49	10	11	12	75	5E	5F	60
50	13	14	15	76	61	62	63
51	16	17	18	77	64	65	66
52	19	1A	1B	78	67	68	69
53	1C	1D	1E	79	6A	6B	6C
54	1F	20	21	80	6D	6E	6F
55	22	23	24	81	70	71	72
56	25	26	27	82	73	74	75
57	28	29	2A	83	76	77	78
58	2B	2C	2D	84	79	7A	7B
59	2E	2F	30	85	7C	7D	7E
60	31	32	33	86	7F	80	81

Code	Byte 1	Byte 2	Byte 3
87	7982	7983	7984
88	85	86	87
89	88	89	8A
90	8B	8C	8D
91	8E	8F	90
92	91	92	93
93	94	95	96
94	97	98	99
95	9A	9B	9C
96	9D	9E	9F
97	A0	A1	A2
98	A3	A4	A5
99	A6	A7	A8

4-4 QUALITY CHECKS

1. Copy Quality

1) Copy density

Method: Visually check the density in the left, right and center.

Standard: Density must be even in the left, right and center.

2) Skew

Method: Copy an R21 test chart using standard resolution.

Standard: The difference in length between A and B must be as follows.

A4 or larger: Less than 1% of the document length.

Smaller than A4: Less than 3% of the document length.

Correction: Clean the R1 and R2 rollers.

Clean the paper feed and separation rollers and the separation plate.

3) Intelligibility

Method: Copy an R21 test chart using standard resolution.

Check the characters in frame F.

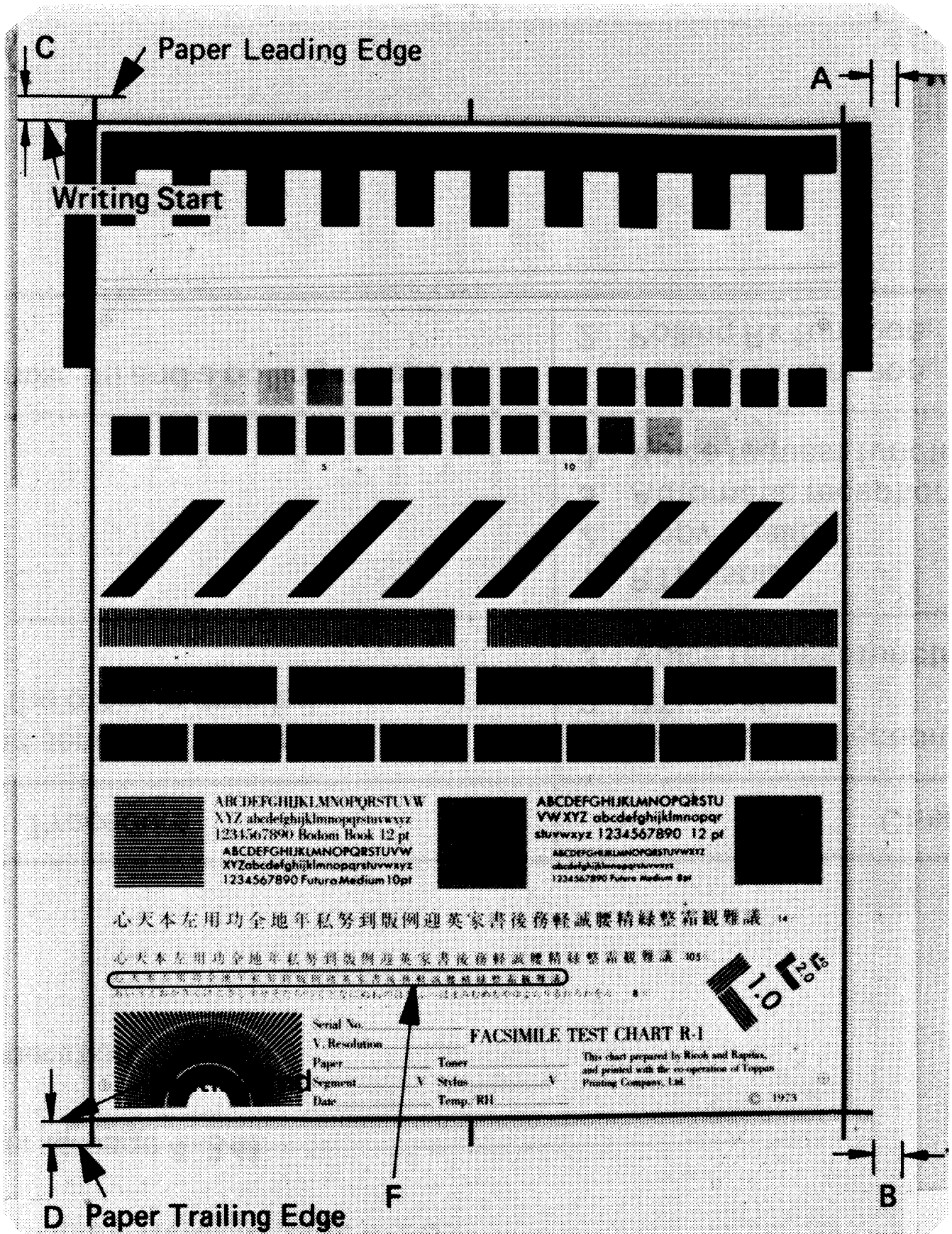
Standard: No characters must be missing in the subscan direction.

Correction: Check and adjust the following.

- Flatness
- Reduction rate
- M T F

Refer to section 6-1 for details.

4) Make another copy. If the copy is still defective, make a printer test (see page 4-37) and check the SBU waveforms if necessary (refer to page 6-1).


C
Paper Leading Edge
A
Writing Start
5
10
ABCDEFGHIJKLMNOPQRSTUVW
XYZ abcdefghijklmnopqrstuvwxyz
1234567890 Bodoni Book 12 pt
ABCDEFGHIJKLMNOPQRSTUVW
XYZabcdefghijklmnopqrstuvwxyz
1234567890 Futura Medium 10pt
ABCDEFGHIJKLMNOPQRSTU
VWXYZ abcdefghijklmnopqr
stuvwxyz 1234567890 12 pt
心天本左用功金地年私努到版例題英家書後務軽試腰精緑整素観難議
心天本左用功金地年私努到版例題英家書後務軽試腰精緑整素観難議
1.0
2.0
Serial No.
V. Resolution
Paper
Toner
Segment
V
Stylus
V
Date
Temp. RH
FACSIMILE TEST CHART R-1
This chart prepared by Ricoh and Rapidax,
and printed with the co-operation of Toppan
Printing Company, Ltd.
© 1973
F
D
Paper Trailing Edge
B

2. Test the operation panel display. Refer to page 4-33.

3. Initialize the sensors (refer to page 4-34).

4. Check ADF and printer operation.

5. Communication Tests

No.	Procedure	Check Items
1	Call a remote unit and send 2 R-6 charts, one in standard and the other in detailed resolution.	1. Resolution selection. 2. RTI display. 3. Voice request function
2	Receive 2 R-6 charts.	1. RTI display. 2. Copy quality. 3. Automatic reception function. 4. Voice request function.
3	Make a polling transmission and a polling reception.	1. Polling Tx function. 2. Polling Rx function.

SECTION 5

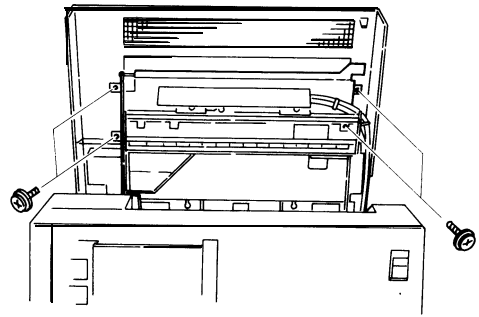
REMOVAL AND REPLACEMENT

Caution (Rapicom K53): **When the machine is switched off, Voice ID is erased. Instruct the user to reprogram Voice ID after you have finished servicing.**

5-1 COVER REMOVAL (K52/53)

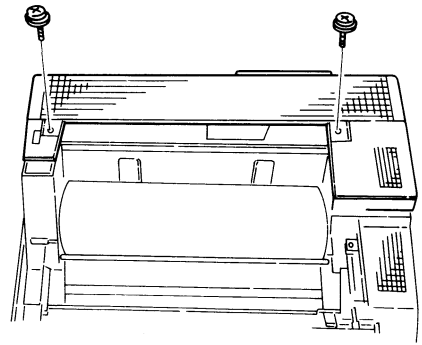
5-1-1 Top Cover

1. Open the upper unit and remove the top cover (four screws).



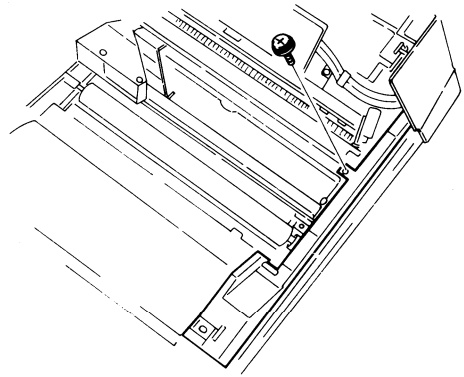
5-1-2 Rear Cover

1. Open the upper unit and remove the rear cover (two screws).



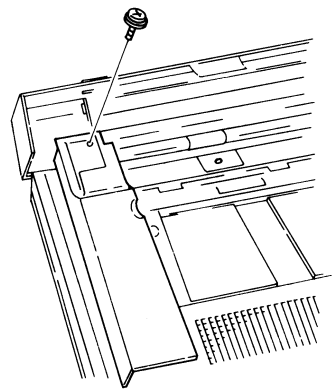
5-1-3 Left Side Cover

1. Remove the rear cover.
2. Remove the left side cover (one screw).



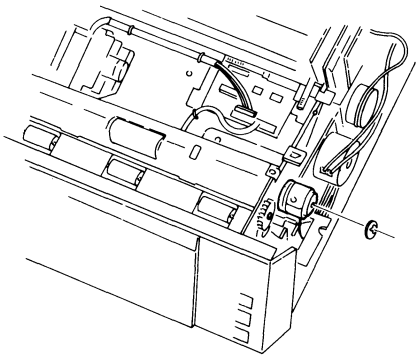
5-1-4 Right Side Cover

1. Open the ADF and remove one screw at the front of right side cover.
2. Remove the rear cover and the right side cover.



5-2 MECHANICAL AND OPTICAL COMPONENTS (K52/53)

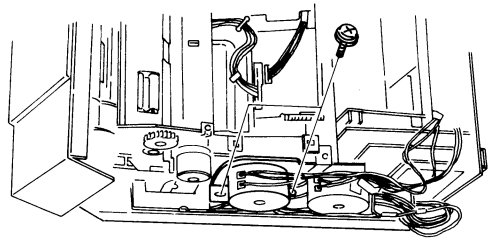
5-2-1 Separation Roller/ADF Clutch



1. Remove the top cover (see section 5-1-1).
2. Remove the right side cover (see section 5-1-4).
3. Remove the ADF clutch cover (one screw).
4. Take off the ADF clutch (one E-ring).
   To remove the ADF clutch completely:
   i) Disconnect CN9 on the FCU.
   ii) Remove the harness retainer bracket below the ADF clutch (one screw).
   iii) Thread the harness through from the FCU.
5. Remove the separation roller guide plate (two screws).
6. Slide out the separation roller shaft (one bushing).
7. Take off the separation roller.
8. Reassemble.
   . Make sure that the Tx drive belts are not obstructed.
   . Make sure that the ADF clutch stopper fits astride the stopper arm, so that rotation of the clutch body will be inhibited.

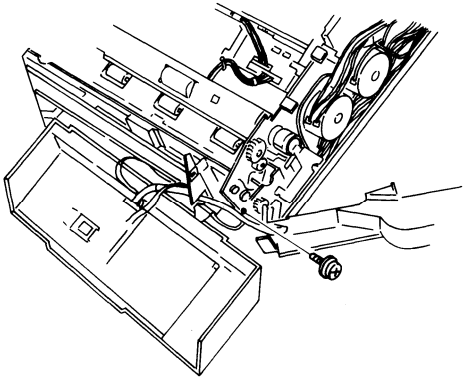
5-2-2 ADF Drive Belts/TX Motor

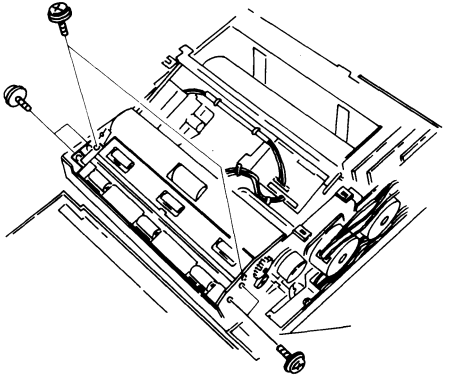
1. Remove the top cover (see section 5-1-1) and right side cover (see section 5-1-4).
2. Remove the harness retainer bracket below the ADF clutch (one screw).
3. Remove the TX motor bracket (two screws).
4. Remove the TX motor (two screws, one connector – to FPD CN2).
5. Remove the two drive belts.
6. Reassemble.
   . Make sure that the Tx drive belts are not obstructed.



5-2-3 LED Array

1. Remove the top cover (see section 5-1-1) and side covers (see section 5-1-3 and 5-1-4).
2. Remove the handset and handset stand.
3. Remove the cover strip directly beneath the document feed-out guide (two screws).
4. Open the ADF.
5. Remove the separation roller guide plate (two screws).
6. Remove the ADF clutch cover (one screw).
7. Remove the gear cover on the left side of the scanner (one screw).
8. Remove the scanner guide plate (four screws).
   Caution: Take care not to damage the exposure glass.
9. Remove the gear (one E-ring) and bushing at the right-hand end of the R1 increment roller. This is the roller directly above the LED array's heat sink.
10. Move the RI increment roller clear of the heat sink.
11. Remove the LED array:
    - Remove two screws.
    - Disconnect CN10 on the FCU.
    - Remove the harness retainer bracket below the ADF clutch (one screw).
    - Feed the cable through.

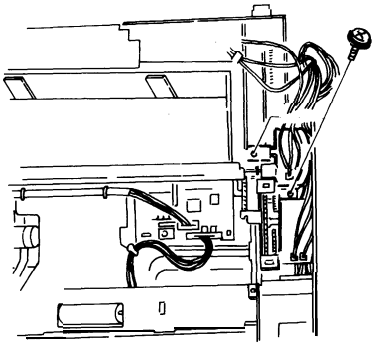




12. Test the new LED array:
    . Connect it up to CN10 on the FCU.
    . Use the LED array test (see page 4-33).
13. Install the new LED array.
    . Wipe off the lens on the LED array assembly with a soft cloth after fixing it in place.
    . Clean the exposure glass (both sides) when replacing the scanner guide plate.
    . Make sure that nothing obstructs the Tx drive belts.
14. Carry out the scanner adjustment procedures. See section 6-1.

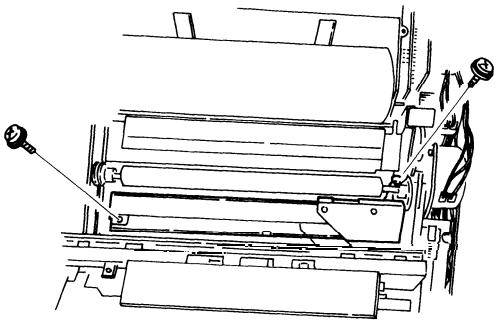
5-2-4 RX Motor

1. Remove the top cover (see section 5-1-1) and the right side cover (see section 5-1-4).
2. Remove the RX motor bracket (two screws).
3. Remove the RX motor (two screws, connector CN3 on the FPD).



5-2-5 Cutter Unit

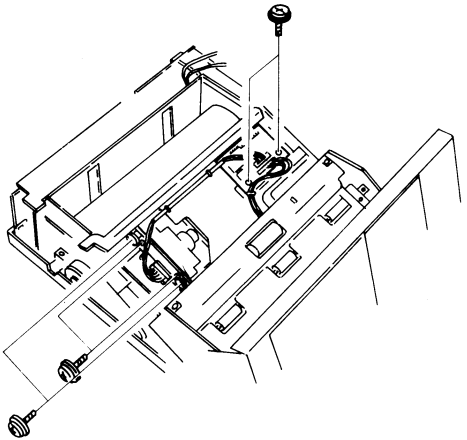
1. Open the upper unit.
2. Remove the right side cover.
3. Remove the cutter unit (two screws, one connector – CN11 on the FCU).
4. Reassemble.
5. Check the cutter clearance (see page 6-5).



5-3 ELECTRONIC COMPONENTS

5-3-1 SBU/VPU

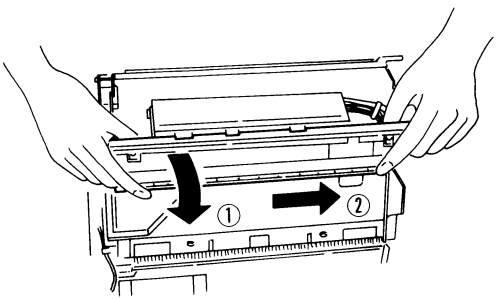
1. Remove the top cover (see section 5-1-1).
2. Remove the SBU board (two screws, one connector).
3. Remove the VPU board (two screws, two connectors).
4. Carry out the SBU adjustment procedure when installing a new board (se-e page 6-1).



5-3-2 Thermal Head

– Thermal head handling precautions –

1. Avoid static electricity because Bi-CMOS LSIs are used.
   Pack the thermal head in an anti-static bag.
2. Clean the heating element surface with alcohol-soaked gauze or soft cloth.
   This prevents irregular density and white blanks due to damaged or stained heating elements.
3. Do not hit or rub the heating element board surface with a sharp edge or hard material.



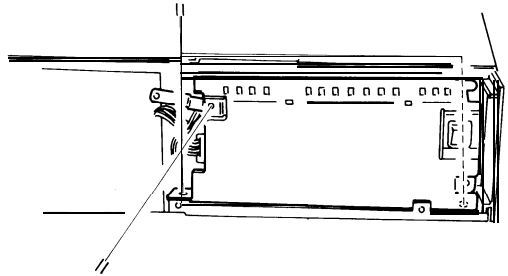
4. Check that the head is positioned properly and that the springs pushing the head against the platen roller are in position.
   If the paper does not contact the heating element surface properly, element life will be shortened.
5. Do not operate the thermal head in excess of the pulse width value shown on the thermal head.
   Otherwise, the heating element life will be shortened.
6. Do not stain the black seal on the thermal head.
   Otherwise, the paper end sensor may malfunction.

– Procedure –

1. Open the upper unit.
2. Remove the screw that holds the thermal head ass'y on the right side.
3. Slide the thermal head ass'y to the left while pressing it.
4. Remove the thermal head ass'y.
5. Remove the thermal head from the bracket (two screws).
6. Install a new thermal head.
   Note: Do not touch the heating elements.
   Read the notes at the beginning of this procedure.
7. Enter the pulse width (see page 4-20).
8. Test the printer (see page 4-37).

5-3-3 PSU

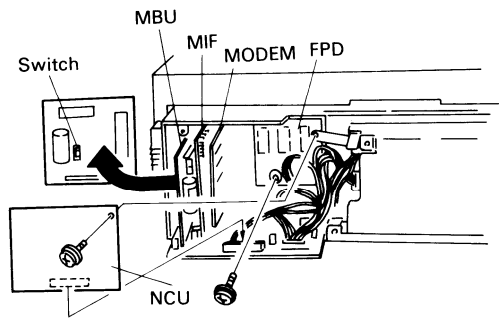
1. Remove the rear cover (see section 5-1-2).
2. Remove the PSU (five screws – two of which grounded, two connectors).



5-3-4 FCU, FPD, NCU, MIF, Modem and MBU

CAUTION: Take care not to dislodge the battery switch jumper on the MBU.

1. Before changing the MBU, do the steps listed in section 5-8-1.
2. Remove the rear cover (see section 5-1 -2).
3. Remove the NCU from the PSU (one screw).
4. Remove one screw (grounded) which holds the FCU to the base.
5. Slide the FCU to the rear and remove 12 (K52) or 13 (K53) connectors.
6. Remove the MBU and MIF with Modem.
7. Remove the Modem from the MIF.
8. Remove the FPD (one screw, three connectors).
   Note: Make sure that the battery switch is turned on when installing a new MBU.
9. After changing the MBU or FCU, carry out the steps listed in section 5-8-2.
10. Kane only – After changing the NCU, adjust the Tx level with VR1 if necessary.

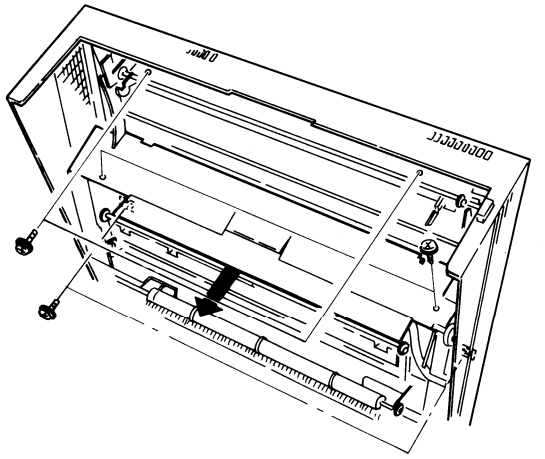


5-4 COVER REMOVAL (K55)

Caution (Rapicom models):
When power is switched off, Voice ID will be erased. Instruct the user to reprogram Voice ID after you have finished servicing.

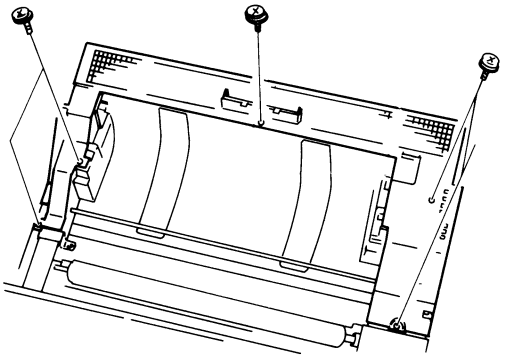
5-4-1 Top Cover

1. Open the ADF.
2. Remove the screws holding down the top cover on each side under the ADF (two screws).
3. Open the upper unit.
4. Remove the SBU cover (two screws).
5. Remove the top cover:
   . Take out four screws.
   • Take off the cover; free the right side first. Be careful not to damage the harness threaded through the hole in the front left of the top cover.



5-4-2 Rear Cover

1. Remove the line connector cover (two screws).
2. Open the upper unit.
3. Remove the rear cover (seven screws).



5-5 MECHANICAL AND OPTICAL COMPONENTS (K55)

5-5-1 LED Array

1. Remove the rear cover (see section 5-4-2).
2. Remove the cutter cover, to the right of the platen roller (one screw).
3. Remove the harness retainer under the cutter cover (one screw).
4. Remove the top cover (see section 5-4-1).
5. Remove the cover strip below the document exit (two screws).
6. Remove the pressure roller/operation panel assembly (one E-ring on the left hinge).
7. Remove the scanner guide plate (four screws – two under the cover removed in step 5, two holding the exposure glass retaining plate springs).
   Caution: Take care not to damage the exposure glass.
8. Loosen the RI increment roller shaft.
   This is the shaft immediately above the LED array heat sink.
   . Lift off the spring bar connecting RI and R2 on the extreme left (item 7-48 of the Parts Catalog).
   . Remove the E-ring at the right end of the R1 roller shaft.
   . Feed the shaft through to the left as far as possible and lift it clear of the heat sink.
9. Take out the LED array (two screws).
   Caution: Take care not to damage the R2 increment roller.
10. Disconnect the LED array at the FCU (CN10) and thread the harness through.
11. Test the new LED array:
    . Connect it to CN10 of the FCU
    . Light the array using the test mode (see page 4-33).
12. Install the new LED array.
    . Wipe off the lens on the LED array with a soft cloth after fixing it in place.
    . Clean both sides of the exposure glass when replacing it.
13. Carry out the scanner adjustment procedures. See section 6-1.

5-6 ELECTRONIC COMPONENTS (K55)

5-6-1 SBU/VPU

1. Open the upper unit.
2. Remove the SBU/VPU cover (two screws).
3. Remove the VPU bracket (one screw).
4. Remove the VPU (two connectors, two screws).
5. Remove the SBU (two screws, one connector).
   After installing a new SBU, carry out the scanner adjustments (see section 6-1)

5-6-2 Thermal Head

– Thermal head handling precautions –

1. Avoid static electricity because Bi-CMOS LSIs are used.
   Pack the thermal head in an anti-static bag.
2. Clean the heating element surface with alcohol-soaked gauze or soft cloth.
   This prevents irregular density and white blanks due to damaged or stained heating elements.
3. Do not hit or rub the heating element board surface with a sharp edge or hard material.
4. Check that the head is positioned properly and that the springs pushing the head against the platen roller are in position.
   If the paper does not contact the heating element surface properly, element life will be shortened.
5. Do not operate the thermal head in excess of the pulse width value shown on the thermal head.
   Otherwise, the heating element life will be shortened.
6. Do not stain the black seal on the thermal head.
   Otherwise, the paper width sensor and the paper end sensor may malfunction.

– Procedure –

1. Remove the SBU/VPU cover (two screws).
2. Remove the thermal head retaining screw (below the left end of the thermal head).
3. Remove the thermal head: push it against the springs and push it to the left.
4. Disconnect the thermal head (two connectors).
5. Remove the thermal head from the bracket (two screws).
6. Install a new thermal head.
   Note: Do not touch the heating elements. Read the notes at the beginning of this procedure
7. Enter the pulse width (see page 4-20).
8. Test the printer (see page 4-37).

5-6-3 P S U

1. Remove the rear cover (see section 5-4-2).
2. Remove the PSU (five screws - two of which grounded, two connectors).
3. Refer to the Figure of Section 5-3-3.

5-6-4 FCU, FPD, NCU, Modem, MIF and MBU

CAUTION: Take care not to dislodge the battery switch jumper on the MBU

1. Before changing the MBU, do the steps listed in section 5-8-1.
2. Remove the rear cover (see section 5-4-2).
3. Remove the NCU (two screws).
4. Remove the screw (grounded) that holds the FCU to the base.
5. Slide the FCU to the rear and disconnect 13 connectors.
6. Remove the MBU, MIF and Modem.
7. Remove the FPD (one screw, three connectors).
8. After changing the MBU or SBU, do the steps listed in section 5-8-2.
9. Kane only – After changing the NCU, adjust the Tx level with VR1 if necessary.
10. Refer to the Figure of Section 5-3-4.

5-7 SENSORS

After replacing SB-4 or SB-5, the sensor initialization procedure must be done. See page 4-34.

5-8 CAUTIONS FOR PCB REPLACEMENT

5-8-1 Before Changing

– MBU –

1. **Print the following reports:**
   - **Telephone List (not K52)**
   - **Program List (not K52)**
   - **Polling File List (not K52)**
   - **Service Report — Keep for reference during future service calls.**
   - **System Report**
   - **TCR — give to the user**
2. **Print out the following RAM data:**
   - **00EB to 00ED (near-end counter)**
   - **7850 to 79A8 (dedicated Tx parameters)**
3. **Check the records for that user to determine what other RAM changes have been made (e.g., redial interval).**
4. **K53/5/7 only – check the status of function 82.**
5. **Make sure that the battery switch of the new MBU is ON.**
6. **Make sure that the settings of JP1 and JP2 are correct for the machine you are working on (see appendix B).**

5-8-2 After Changing

– MBU –

1. Initialize the RAM on the new MBU.
   . Use RAM R/W mode to change the data in address 14B0 to 00.
   . Switch the power switch off and on.
   Note: Wait 10 seconds before turning power back on due to possible damage to the PSU.
2. Carry out quality checks 1-4 in section 4-4.
3. K53/5/7 only – reprogram the shorthand numbers, one-touch keys, groups, keystroke programs and polling files. Also, program function 82.
4. Reprogram the items listed on the system report.
5. Enter the thermal head size and pulse width with function 97.
6. Enter the RAM data previously noted in steps 2 and 3 of section 5-8-1.
7. Enter the date and time.
8. Make a communication test (item 5 of section 4-4).
9. Instruct the user to reprogram the Voice ID (not required for K52 or Kane models).

– FCU –

1. Adjust the standby level of the video signal (item 1 of section 6-1).
2. Carry out the quality checks stated in section 4-4.
3. Enter the date and time.
4. Instruct the user to reprogram the Voice ID (not required for K52 or Kane models)

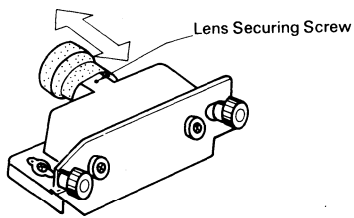
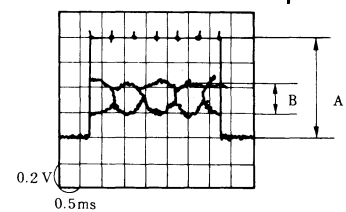
SECTION 6

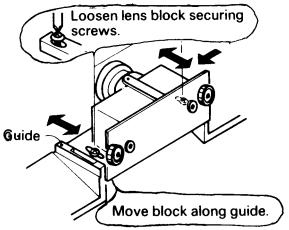
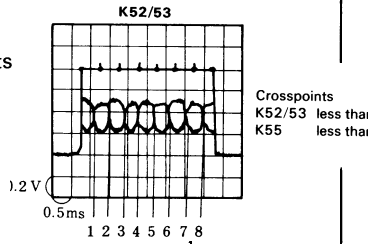
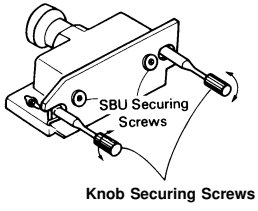
ADJUSTMENT

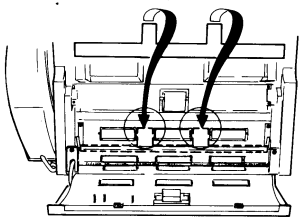
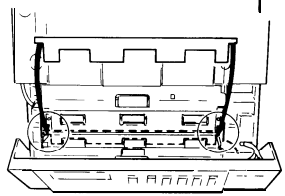
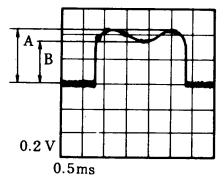
6-1 SCANNER

Scanner Test Points

VPUCN3 – 1 VIDADJ
2 XVIDEO
3 GND

No.	Item	Procedure	Standard	Tools	Symptoms	Remarks
1	Standby level	1. Keep the LED array off. 2. Adjust VR1 on the SBU until XVIDEO is within the standard limit.	XVIDEO = 1.0–1.5V	Oscilloscope Watchmakers screwdriver	Copies too bright or too dark.	
2	Focusing	1. Set the 8-line/mm pattern of the test chart at the scan line position. 2. Loosen the lens securing screw. 3. Move the lens back and forth until B is maximised. (Test point = XVIDEO)  4. Tighten the lens securing screw.	B/A X 100 ≧20  	Oscilloscope Allen keys Test chart (R1, R21)	Blurred characters	

No.	Item	Procedure	Standard	Tools	Symptoms	Remarks
3	Reduction rate	1. Set the 8-line/mm pattern of the test chart at the scan line position. 2. Loosen both lens block securing screws. 3. Push the lens block to the left and move it back and forth until the XVIDEO signal has 8 or fewer (K52/3) or 15 or fewer (K55/7) crosspoints.  4. Tighten the lens block securing screws.	e.g. 8 crosspoints 	Oscilloscope Philips screwdriver Test chart (R1, R21)	Blurred or filled-in characters	
4	Scan line	1. Loosen both adjusting knob securing screws and the SBU securing screws. within the standard limit. 		Oscilloscope Philips screwdriver Scan line test strip	Uneven density, partial scanning	

No.	Item	Procedure	Standard	Tools	Symptoms	Remarks
4	Scan line (continued)	2. Switch the LED array on (see page 4-32). 3. Set the scan line test strip on the exposure glass as shown below:  K55/57  K52/53 4. Adjust the white XVIDEO waveform with the adjusting knobs unit it is as shown on the right. 5. Tighten the adjusting knob securing screws. 6. Take out the test strip. 7. Adjust VR1 on the SBU until XVIDEO is XVIDEO = 0.2 – 0.4V within the Standard limit.	 MAX 0.4V MIN 0.2V (A – B)/A x 100 ≦ 40			If flatness out of spec. clean mirrors or change LED array.

No.	Item	Procedure	Standard	Tools	Symptoms	Remarks
5	Scan starting position	1. Set the scan line test strip on the exposure glass as in procedure 2 above. 2. Slightly loosen the SBU securing screws. 3. Connect one channel of the oscilloscope to XVIDEO and one to VIDADJ. 4. Gently tap the SBU until its position is correct. 5. Tighten the SBU securing screws. test chart at the scan line position		Oscilloscope Philips screwdriver Scan line test strip	Registration errors	
6	Error bits	1. Set the white zone of the test chart at the scan line. 2. Ensure that there are no abnormal peaks in the XVIDEO waveform	No abnormal peaks.	Test chart, oscilloscope: 0.2V/div 0.5ms/div	Abnormal lines along prints made by the copy key.	Replace the SBU if error bits are visible

6-2 PRINTER

No.	Item	Procedure	Standard	Tools	Symptoms	Remarks
1	Clearance between the platen roller and the lower cutter guide	1. Loosen the two screws that hold the cutter unit. 2. Move the cutter unit back and forth until the clearance is correct. 3. Tighten the screws.	T=0.3 ±0.1mm	Philips screwdriver, clearance gauge	Paper jam	If you switch machine off, Voice ID must be repro-grammed.

6-3 ADF

No.	Item	Procedure	Standard	Tools	Symptoms	Remarks
1	Clearance between the scanner base and the stopper	1. Loosen the timing pulley allen screw. 2. Loosen the stopper allen screw. 3. Move the stopper until the clearance is correct. 4. Tighten the allen screws.	T=0.3 ±0.1mm	Philips screwdriver, Allen key, clearance gauge	Document jam	As for 6-2.

SECTION 7

MAINTENANCE

7-1 PRINCIPLE

When visiting a customer on a service call, carry out the maintenance described in this section.

7-2 CLEANING

1. ADF/Scanner

Item to be cleaned	Material to be used
a) Separation Rubber Plate	Soft cloth (water)
b) Separation Roller	Soft cloth (water)
c) R1 and R2 Incremental Rollers	Soft cloth (water)
d) R1 and R2 Pressure Rollers	Soft cloth (water)
e) S1, S2 and S3 Sensors	Blower brush
f) Exposure Glass	Soft cloth (alcohol)

2. Printer Unit

Item to be cleaned	Material to be used
a) Thermal Head	Soft cloth (alcohol)
b) Platen Roller	Soft cloth (alcohol)
c) Sensors	Blower brush

7-3 PERFORMANCE CHECKS

Carry out the quality checks given in section 4-4.

7-4 VIDEO SIGNAL CHECKS

1. White Waveform Check

1) Position the white zone of the R21 test chart at the scan line.
Check the output waveforms at CN3-2 (Signal) and CN3-3 (GND) of the VPU for the following adjustment procedures.
a) White level output
b) Flatness
c) Error bits ,

Refer to section 6-1 for details.

2) Position the 8-line/mm pattern of the R21 test chart at the scan line.
Check the output waveforms at CN3-2 and CN3-3 of the VPU for the following procedures.
a) Reduction rate
b) MTF (focusing)

7-5 LINE CONNECTION CHECK

Check:
1) Ground connection
2) Telephone and line connection

7-6 OTHERS

Check the supply of consumables on the user's premises.

SECTION 8

TROUBLESHOOTING

8-1 ERROR CODES

1. Protocol Errors

– G3 transmission –

Code	Meaning	Suggested Cause/Action
0-00	DIS/NSF/GI not detected within 35 seconds after the Start button was depressed.	1. Check all connections inside the machine. 2. Replace the FCU. 3. Replace the modem. 4. Measure the Rx signal level. 5. Check the received signal on an oscilloscope. 6. Incompatible remote terminal. 7. Replace the NCU.
0-01	DCN detected	1. Check remote terminal for printer failure (jam or empty roll) or if operator pushed Stop.
0-02	Remote terminal G3 mode disabled	Check the remote terminal.
0-03	Incompatible remote terminal	Example: 1850, 1000,800
0-04	CFR or FTT not detected from remote unit after MODEM training	1. As for 0-00, actions 1 → 4. 2. Check the remote terminal. 3. Replace the NCU and/or modem. 4. Check the Tx signal level. 5. Check for a line problem.

Code	Meaning	Suggested Cause/Action
0-05	FTT from remote unit detected after MODEM training at 2400 bps	1. As for 0-00, actions 1 → 3. 2. Replace the NCU and/or modem. 3. Check the Tx signal level. 4. Check for line problems.
0-06	DIS detected after DCS and modem training were sent (machine failed after 3rd try)	1. As for 0-00, actions 1 → 3. 2. Replace the NCU. 3. Check the remote terminal. 4. Check the Tx signal level. 5. Incompatible remote terminal. 6. Check for line problems.
0-07	Post message response signal not detected after transmission.	1. As for 0-00, actions 1 → 3. 2. Line was disconnected.
0-08	RTN or PIN detected after transmission	1. Check the Tx signal level. 2. As for 0-00, actions 1 → 3. 3. Replace the NCU. 4. Defective modem at either end. 5. Check for line problems and noise. 6. Rx signal at either end too weak or too strong. 7. Check line connections. 8. Check remote terminal: . Is paper jammed? . Send to another remote terminal. . Decrease modem rate.

Code	Meaning	Suggested Cause/Action
0-09	Protocol signal could not be recognized	1. As for 0-00, actions 1 → 3. 2. Check the remote terminal.
0-10	As for 0-08, but error report disabled	As for 0-08.
0-11	Error code memory overflow when printer failed	1. Check for printer jam or roll end.
0-12	After sending at 2400 bps, RTN was detected.	As for 0-08.
0-15	Confidential or transfer function with remote unit not possible	Check whether the remote terminal has SAF, or whether its SAF is full.
0-16	CFR/FTT in Confidential mode not detected	1. As for 0-00, actions 1 → 3. 2. Replace the NCU. 3. Measure the Rx signal level. 4. Check the Tx signal level. 5. Check the remote terminal.

Code	Meaning	Suggested Cause/Action
0-20	Image information not received within 6 seconds after retraining	1. Check all connections inside the machine. 2. Replace the FCU. 3. Replace the modem. 4. Check for line problems.
0-21	When receiving image information, the following EOL not detected within 5 seconds of the previous EOL	1. As for 0-20. 2. Check for line noise. 3. Disconnected line. 4. Check remote FCU is faulty.
0-22	Modem carrier dropped for 200ms or more while receiving image information	1. As for 0-20. 2. Replace the NCU. 3. Check the remote terminal. 4. Check for line problems. 5. Remote terminal modem faulty.
0-23	Line errors have exceeded the limit	1. As for 0-20. 2. Replace the NCU. 3. Measure the Rx signal level. 4. Check for line noise. 5. Check remote NCU/modem is faulty.

Code	Meaning	Suggested Cause/Action
0-50	CFR or MCF not detected within 5 seconds after phasing or image information transmission	1. As for 0-20. 2. Measure the Tx signal level. 3. Incompatible remote terminal
0-51	CFR or MCF carrier not dropped for 6 seconds or more	1. As for 0-20. 2. Incompatible or defective remote terminal. 3. Check MCF/CFR signal turn-off timing.
0-52	PIS detected but operator did not respond	1. Check all connections inside the machine. 2. Check with the operator whether operator call tone sounded. 3. Faulty stop key. 4. Check whether operator call is working. If not, replace FCU. 5. If no ACK/NAK tones on pushing a key, change speaker.
0-53	Confidential N/A because remote terminal is G2	1. As for 0-52, item 1. 2. Replace the FCU. 3. Replace the OP-PORT.

– G2 reception –

Code	Meaning	Suggested Cause/Action
0-60	Phasing signal not finished within 8 seconds.	1. As for 0-20. 2. Check phasing signal timing.
0-61	Image information not received within 3 seconds.	1. As for 0-60. 2. Incompatible or defective remote terminal.
0-62	Phasing failed	1. As for 0-61. 2. Try to receive from another G2 unit.
0-63	"Black" line sync signal longer than expected.	1. As for 0-62
0-64	EOM not detected within 3 seconds.	1. As for 0-20. 2. Defective remote terminal. 3. Check whether EOM signal comes in.
0-65	EOM carrier not dropped within 5 seconds.	1. As for 0-20, item 1 → 3. 2. Incompatible or defective remote terminal. 3. Check EOM signal timing.

– G3 or G2 communication –

Code	Meaning	Suggested Cause/Action
0-70	Communication modes unmatched	1. Check all connections inside the machine. 2. Replace the FCU. 3. Replace the modem. 4. Check what mode is selected at remote terminal.

2. Document Errors

Code	Meaning	Suggested Cause/Action
1-00 1-01	Document jammed Maximum document length exceeded. (Transmission, Copy)	1. Improperly inserted document. 2. Misadjusted or faulty sensors. 3. Replace FCU. 4. Replace Tx motor. 5. Check all connectors inside machine. 6. Document length exceeded maximum. 7. Check document feed condition.
1-10	Document in reading position at power-up.	1. Check all connectors inside machine. 2. Replace the FCU. 3. Check SB1. 4. Check whether a document is actually jammed.
1-11 1-12 1-13 1-14	Document was pulled out prematurely (G3 Tx) Document was pulled out prematurely (G2 Tx) Document was pulled out prematurely (copy) Document was pulled out prematurely (Poll standby)	I. As for 1-10. 2. Check SB2. 3. Check whether operator pulled out document during operation.

Code	Meaning	Suggested Cause/Action
1-15	Document was set when a jam condition existed.	1. As for 1-00.
1-17	Document jammed when feeding out.	1. Replace the FCU. 2. Check SB2. 3. Scanner feedout path blocked. 4. Document length exceeded maximum. 5. Check document feed condition.

3. Printer Errors

– Paper jam –

Code	Meaning	Suggested Cause/Action
1-20 1-21	Paper jammed during receiving Paper jammed after printing	1. Replace the FCU. 2. Check all connectors inside machine. 3. Check SB5. 4. Paper path obstructed. 5. Copy tray overloaded. 6. Check whether paper is actually jammed. 7. Check that paper feed operation is normal.
1-23 1-24	Paper jammed at cutter When the sub-power turned on, cutter not returned to the initial position.	1. As for 1-20, items 1 and 2, 4 → 6. 2. Check SB7. 3. Cutter jammed.

– No paper –

Code	Meaning	Suggested Cause/Action
1-30 1-33 1-34	Paper emptied during reception, copying or report printing Paper emptied when the sub-power turned on. . Paper emptied after recording	1. As for 1-20, items 1 and 2. 2. Check SB4. 3. Paper ran out.
1-50 1-51	Thermal head error during reception Thermal head error during copying	1. As for 1-20, items 1 and 2 2. Replace thermal head.
1-71	Cover opened during printing	1. Check all connections inside machine. 2. Check whether operator opened covers. 3. Check cover switch position and action.

4. PCBs

Code	Meaning	Suggested Cause/Action
2-00	FCU stalled — interrupt timer to CPU stopped	1. Replace FCU. 2. Replace PSU.
2-10 2-11 2-12	Modem not turned into transmission state Rx data transfer clock not output Tx data transfer clock not output	1. Check modem – FCU connection. 2. Replace FCU. 3. Replace modem.
2-20 2-21 2-22 2-25 2-26	No data compression Data compression; not completed A scan line needed more than 10s for compression No phasing signal Data not sent out	1. Check all connections inside machine. 2. Replace FCU.

Code	Meaning	Suggested Cause/Action
2-30	Ringing signal detection continues for more than 6s	1. As for 2-20. 2. Replace NCU. 3. Replace modem. 4. Check the line condition,
2-31	Line not connected	
2-32	Line not disconnected	
2-33	Incoming carrier either: Continues for more than 6s Has signal dropout less than 200ms	
2-34	Incoming carrier continues for more than 6s	
2-40	Abnormality after interrupt signal	1. As for 2-20. 2. Replace OP-PORT.
2-41	Abnormality when FCU receives OP-PORT data	
2-42	Abnormality after operator adjusted clock	

8-2 SYMPTOM TROUBLESHOOTING

1. Document Feed

– Non Feed –

Broken Tx motor or timing belt
Faulty FCU board
Faulty ADF clutch
Dirty separation roller – clean with a soft cloth and water

– Double Feed –

Dirty separation roller – clean with a soft cloth and water
Dirty separation plate – clean with a soft cloth and water

– Misfeed or Skew –

Dirty RI or R2 roller – clean with a soft cloth and water (increment roller) or alcohol (pressure roller)
Dirty separation roller – clean with a soft cloth and water
Dirty separation plate – clean with a soft cloth and water
Incorrect clearance between scanner base and stopper – see section 6-3.

– Soiled Document –

Dirty R1 or R2 roller – clean with a soft cloth and water (increment roller) or alcohol (pressure roller)
Dirty separation plate – clean with a soft cloth and water
Dirty separation roller – clean with a soft cloth and water

2. Copy Feed

– Non Feed –

Rx motor or timing belt broken
Faulty FCU board

– Jam –

Incorrect cutter guide/platen roller clearance – see section 6-2.

3. Copy Quality

1) Received Copies

If there is no fault in the transmitting terminal or on the line, but the copy quality is bad, either;
- **Check that the top cover is closed properly.**
- **Check the thermal head pulse width.**
- **Clean the thermal head (soft cloth)**

If the output continually appears to be stretched;
- **Check the Rx timing belts.**

2) Copies made in Copy mode

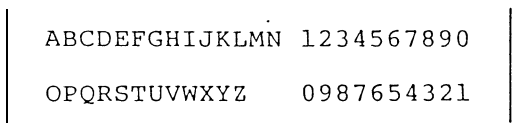
The following ADF and scanner faults must be considered in addition to the printer faults mentioned in subsection 1) above.

symptom	Causes	Remedies
Blank or Black copies	Scanner or PCB failure	Replace defective part.
Vertical Lines	1) Dirty mirror 2) Error bit in CCD	1) Clean with a soft cloth. 2) Replace SBU.
Uneven Density	1) Scan line out of position 2) Dirty mirror, lens, or LED array 3) Old or dirty LED array	1) See section 6-1. 2) Clean with a soft cloth. 3) Clean or replace.
Magnification	Check the reduction rate.	See section 6-1.
Blurred Characters	1) Focusing needs adjusting 2) Reduction rate needs adjusting	1) See section 6-1. 2) As above.
Filled-in Characters	1) Reduction rate needs adjusting	1) As above.
Side-to-Side Registration Error	1) Scan starting position needs adjusting	1) As above.
Output too Light or too Dark	1) White level needs adjusting 2) Standby level needs adjusting	1) As above. 2) As above.
One side darker than the other	1) Check CCD waveform flatness.	1) As above.
Partial scanning	1) Scan line out of position	1) As above.

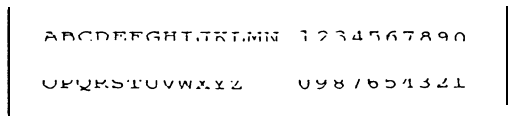
3) Effects of line problems on copy quality

1. Missing lines; shrinkage in sub scan direction.

– Original –

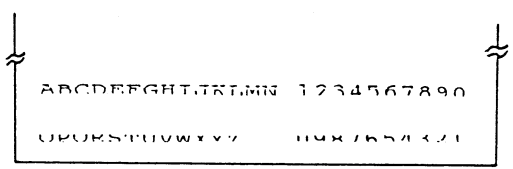


– Bad copy sample –



2. cut off.

– Bad copy sample –



Some lines may be missing just before the cutoff.

SECTION 9

PARTS CATALOG

RICOH

PARTS CATALOG

FOR

RICOH FAX10/20 (For Europe) [K52/53]

August 1, 1987

RICOH COMPANY, LTD.

PARTS CATALOG

INTRODUCTION

This chapter instructs you the numbers and names of this parts on this machine

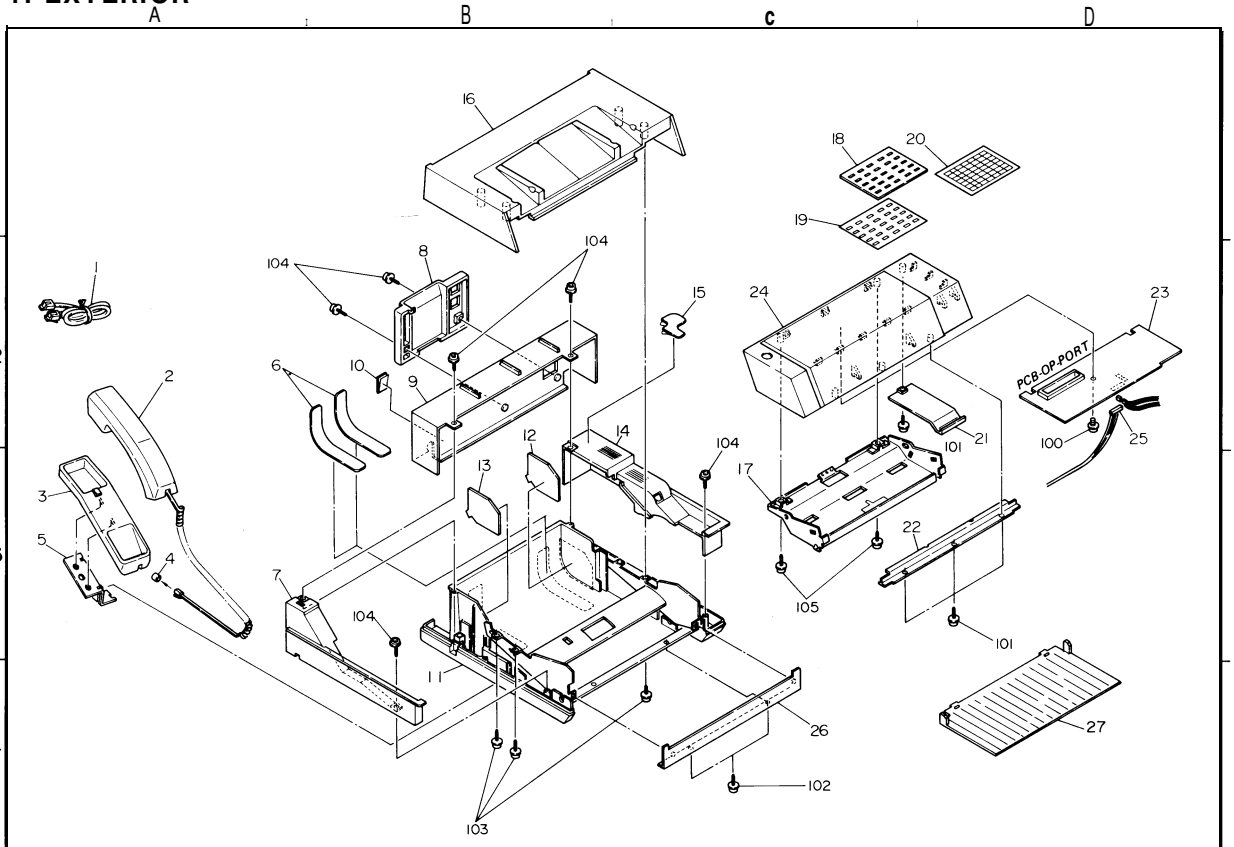
INDEX to PARTS CATALOG

Note: Model

52 . . . . . FAX10(K52)

53 . . . . . FAX20(K53)

1. EXTERIOR

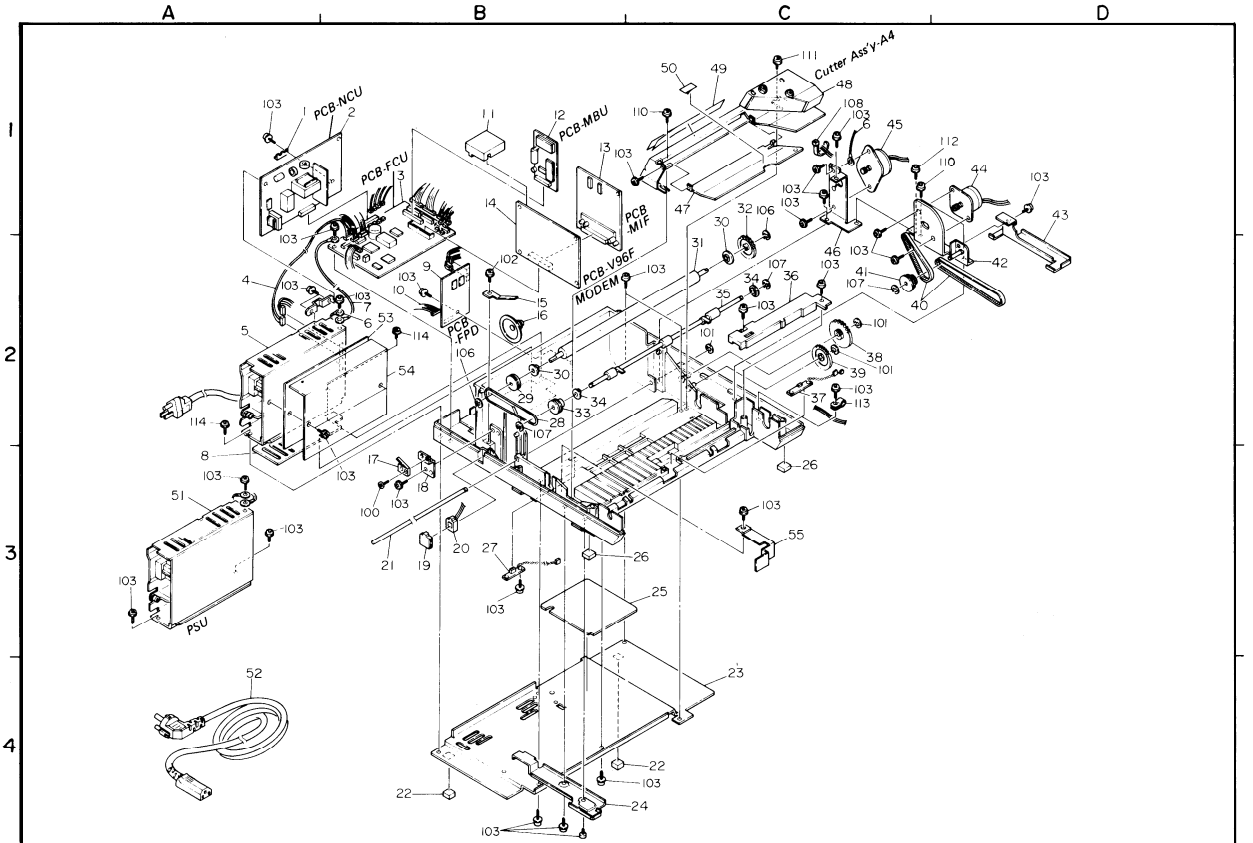


1. EXTERIOR

INDEX	PART NO.	DESCRIPTION	MODE L	LOCA-TION
*	H012 3707	Operator Manual - FAX10 - German	2G	*
*	H012 3708	Operator Manual - FAX10 - English	2E	*
*	H012 3709	Operator Manual - FAX10 - Italian	2I	*
*	H013 4115	Operator Manual - FAX20 - German	3G	*
*	H013 4116	Operator Manual - FAX20 - English	3E	*
*	H013 4117	Operator Manual - FAX20 - Italian	3I	*
*	H012 4653	Basic Operator Manual - FAX20 - Italian	2G	*
*	H012 4655	Basic Operator Manual - FAX10 - English	2E	*
*	H012 4657	Basic Operator Manual - FAX10 - Italian	2I	*
*	H013 4653	Basic Operator Manual - FAX20 - German	3G	*
*	H013 4655	Basic Operator Manual - FAX20 - English	3E	*
*	H013 4657	Basic Operator Manual - FAX20 - Italian	3I	*
1		Not Used		
2		Not Used		
3		Not Used		
4		Not Used		
5		Not Used		
6	H012 2148	Cover - Roll Paper		A-2
7	H012 3660	Side Cover - Left		A-3
8	H012 3673	NCU Cover		B-2
9	H012 3675	PSU Cover		B-2
10	H015 4800	Decal - Power Switch		B-2
11	H012 2161	Base		B-4
12	H012 2159	Paper Spacer - Right		B-3
13	H012 2160	Paper Spacer - Left		B-3
14	H012 3661	Side Cover - Right		B-3
15	H012 4807	Decal - Paper Replacement--German	G	C-2
15	H012 4808	Decal - Paper Replacement--English	E	C-2
15	H012 4809	Decal - Paper Replacement--Italian	I	C-2
16	H012 3665	Top Cover		B-1
17	H012 1133	Base - ADF		C-3
19	H013 4203	Addresses Card	3	C-2
20	H013 4204	Seal Addresses Card	3	C-1
21	H012 3671	Inner Cover - Op-Port		D-3
22	H012 3670	Bottom Cover - Op-Port		C-3

INDEX	PART NO.	DESCRIPTION	MODEL	LOCA-TION
23	H012 6006	PCB - OP-Port -FAX10	2	D-2
23	H013 6010	PCB - OP-Port - FAX20	3	D-2
24	H012 3704	Op-Port Ass'y-- FAX10 - German	2G	C-2
24	H012 3705	Op-Port Ass'y - FAX10 - English	2E	C-2
24	H012 3706	Op-Port Ass'y - FAX10 - Italian	2I	C-2
24	H013 5208	Op-Port Ass'y - FAX20 - German	3G	C-2
24	H013 5209	Op-Port Ass'y - FAX20 - English	3E	C-2
24	H013 5210	Op-Port Ass'y - FAX20 - Italian	3I	C-2
25	H012 5025	Harness - FCU/OPU - A4	2	D-3
25	H012 5005	Harness - FCU/OPU - A4	3	D-3
26	H012 3663	Front Cover		C-4
27	H012 4683	Original Tray		D-4
100	0965 3006B	Tapping Screw with Flat Masher - M3 x 6		D-3
101	0965 3008B	Tapping Screw with Flat Washer - M3 x 8		D-4
102	0323 0060B	Philips Sunk Screw - M3 x 6		C-4
103	0951 4006B	Philips Screw with Flat Washer - M4 x 6		B-4
104	0951 3008B	Philips Screw with Flat Washer - M3 x 8		B-3
105	0951 3005B	Philips Screw with Flat Washer - M3 x 5		C-3

2. LOWER UNIT

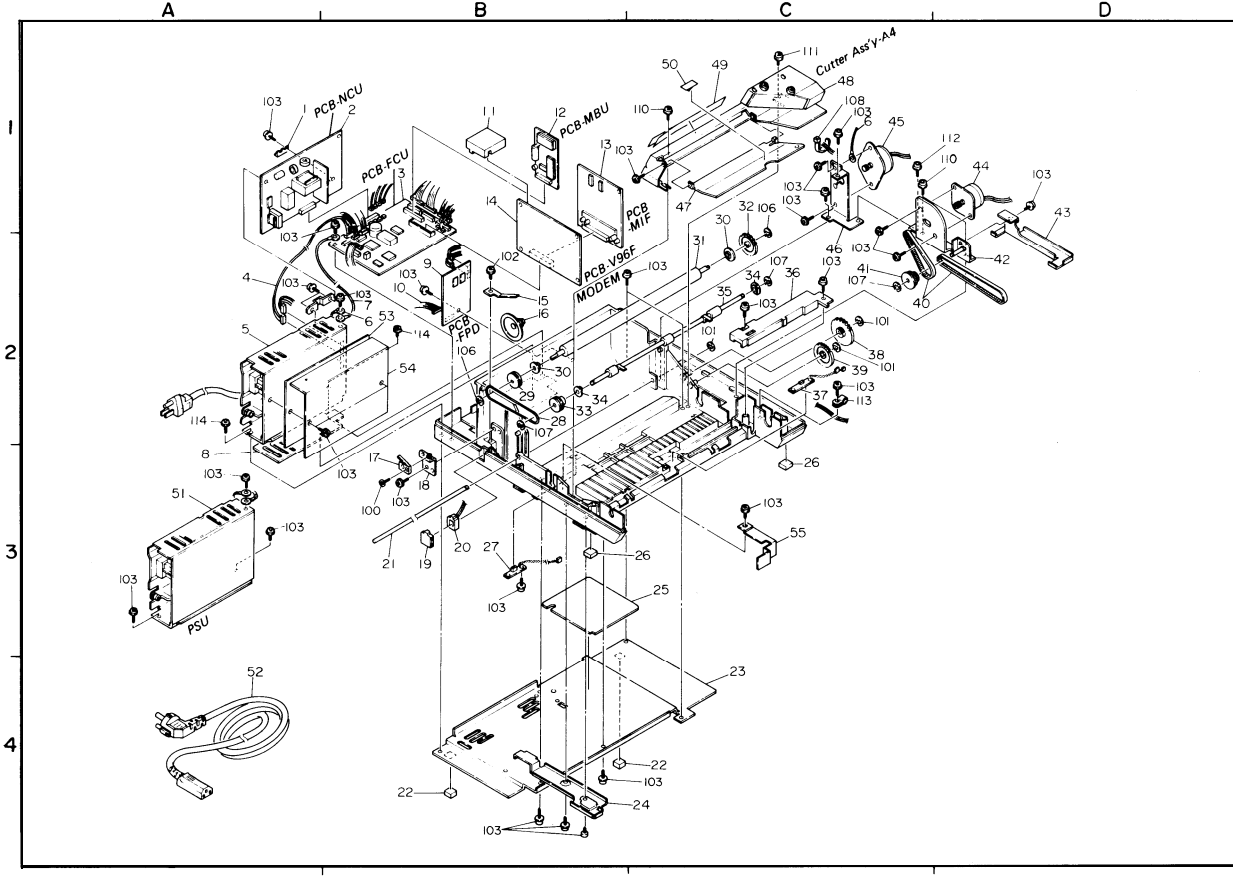

A
B
C
D
1
2
3
4
PCB-NCU
PCB-FCU
PCB-MBU
PCB-MIF
PCB-V96F MODEM
PCB-FPD
PSU
Cutter Ass'y-A4

2. LOWER UNIT

INDEX	PART NO.	DESCRIPTION	MODEL	LOCATION
1		Not Used		
2	H012 6009	PCB - NCU		B-1
3	H012 6026	PCB - FCU		B-1
4	H012 5009	Harness - FCU/PSU		A-2
5		Not Used		A -2
6	H014 5024	Ground Wire Ass'y		B-2
7	H012 5026	Ground Wire - FCU/PSU		B-2
8	H012 2169	Spacer PSU		B-2
9	H012 6014	PCB - FPD		B-2
10	H012 5010	Harness - FCU/FPD		B-2
11	H012 3634	Holder - MBU		B-1
12	H012 6023	PCB - MBU - FAX10 - German	2G	B-1
12	H012 6024	PCB - MBU - FAX10 - English	2E	B-1
12	H012 6025	PCB - MBU - FAX10 - Italian	2I	B-1
12	H013 6023	PCB - MBU - FAX20 - German	3G	B-1
12	H013 6024	PCB - MBU - FAX20 - English	3E	B-1
12	H013 6025	PCB - MBU - FAX20 - Italian	3I	B-1
13	H012 6015	PCB - MIF		B-1
14	5474 6024	PCB Ass'y -V96F Modem		B-1
15	H012 3619	Holder - Speaker		B-2
16	H013 5012	Speaker Ass'y - A4	3	B-2
17	H012 5014	Door Switch - SB10		B-3
18	H012 3622	Bracket - Door Switch		B-3
19	H012 3672	Jack Cover		B-3
20	H013 5011	Modular Jack Ass'y	3	B-3
21	H012 2109	Shaft - Paper Stopper		B-3
22	5474 3244	Rubber Foot - Rear		B -4
23	H012 2103	Metal Base		C-4
24	H012 2149	Harness Cover		C -4
25	H012 2110	Insulating Sheet -Metal Base		C-3
26	H012 2111	Rubber Foot - Front		C -3
27	H012 5016	Paper Sensor - SB4		B-3
28	H012 2114	Belt - Feed Out		B-2
29	H012 2113	Pulley - Platen Roller - A4		B-2
30	5474 2152	Bushing - Platen Roller		B-2

INDEX	PART NO.	DESCRIPTION	MODEL	LOCATION
31	H012 2136	Platen Roller - A4		C-2
32	H012 2137	Gear - Platen Roller - 39T		C-1
33	H012 2112	Pulley - Feed Out Roller - A4		B-2
34	H012 2119	Bushing - M4		C-2
35	H012 2115	Feed Out Roller - A4		C-2
36	H012 2167	Holder - Jam Sensor		C-2
37	H012 5017	Jam Sensor - SB5		C-2
38	H012 2139	Idle Gear 2 - Printer - 53/15T		C-2
39	H012 2138	Idle Gear 1 - Printer - 33T		C-2
40	H012 1121	Timimg Belt - 80T		C-2
41	H012 1122	Idle Pulley 14/35T		C-2
42	H012 1118	Motor Bracket Ass'y		D-2
43	H012 2151	Holder - Harness - Front Right		D-1
44	H012 5000	Tx Motor Ass'y		D-1
45	H012 5001	Rx Motor Ass'y		C-1
46	H012 2158	Bracket - Rx Motor		C -2
47	H012 2133	Cover Jam Removal		C-1
48	H012 2182	Cutter Ass'y - A4		C-1
49	H012 4810	Decal - Paper Guide - German	G	C-1
49	H012 4811	Decal - Paper Guide - English	E	C-1
49	H012 4812	Decal - Paper Guide - Italian	I	C-1
50	H012 4804	Decal - Paper Jam		C-1
51	H012 5403	PSU - 220V, A4		A-3
52		Not Used		
53	H013 3120	Insulating Sheet		B-2
54	H013 3117	Heat Shield Sheet		B-2
55	H012 2153	Harness Holder - Left		B-3

2. LOWER UNIT

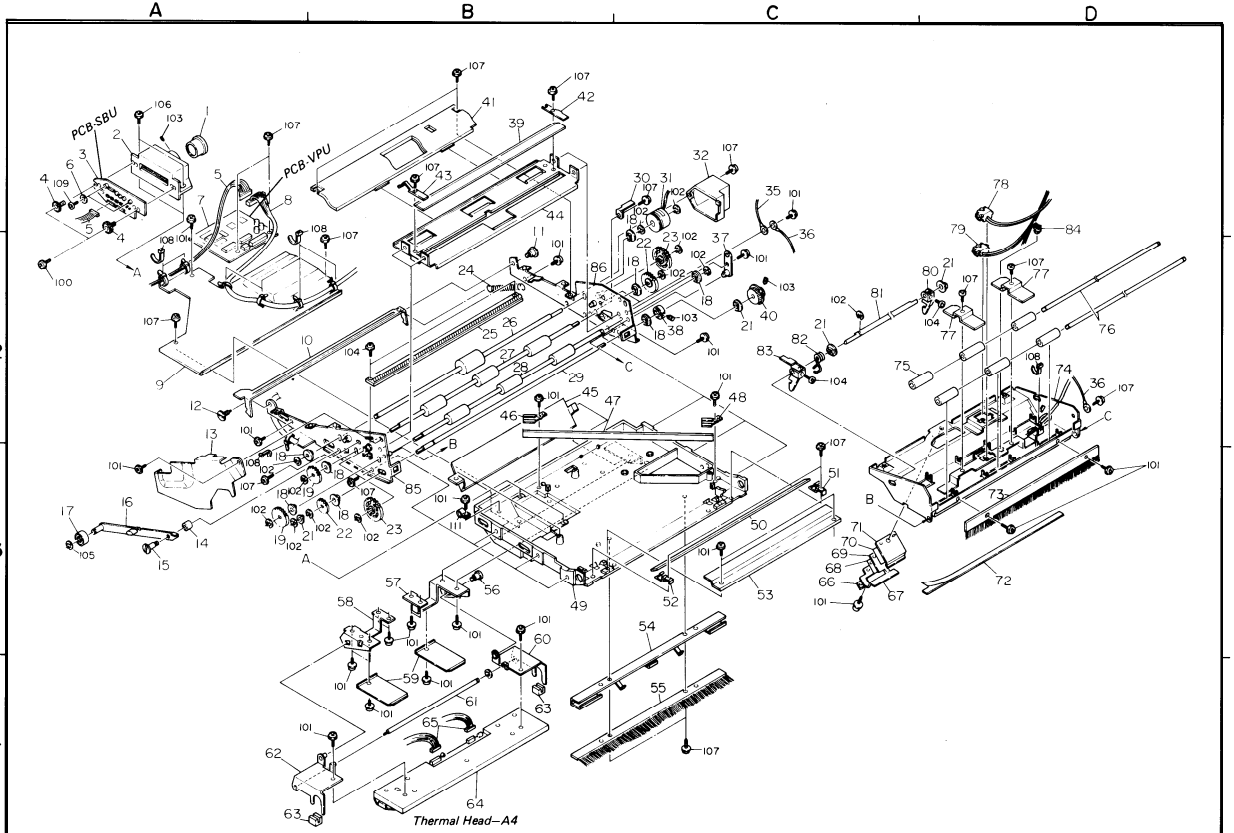

A
B
C
D
1
2
3
4
PCB-NCU
PCB-FCU
PCB-MBU
PCB-MIF
PCB-V96F MODEM
PCB-FPD
PSU
Cutter Ass'y-A4

2. LOWER UNIT

INDEX	PART NO.	DESCRIPTION	MODEL	LOCATION
101	0720 0040E	Retaining Ring - M4		C-2
102	0965 3006B	Tapping Screw with Flat Washer - M3 x 6		
103	0951 3005B	Philips Screw with Flat Washer - M3 x 5		A-1
106	0720 0060E	Retaining Ring - M6		B-2
107	0720 0030E	Retaining Ring - M3		B-2
108	1105 0076	TY-Wrap		C-1
110	0951 3008B	Philips Screw with Flat Washer - M3 x 8		D-1
112	0951 3012B	Philips Screw with Flat Washer - M3 x 12		D-2
114	0951 3008B	Philips Screw with Flat Washer - M3 x 8		A-2

INDEX	PART NO.	DESCRIPTION	MODEL	LOCATION

3. UPPER UNIT

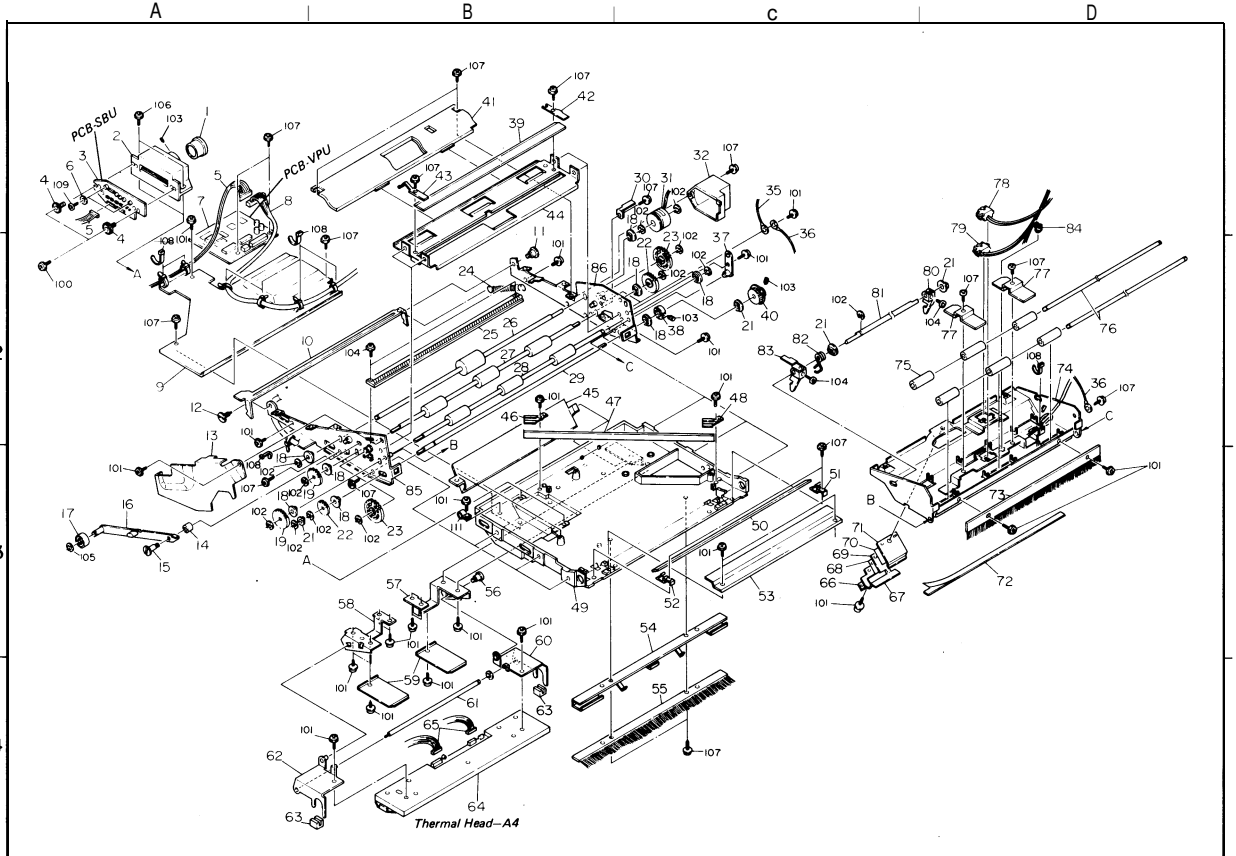


3. UPPER UNIT

INDEX	PART NO.	DESCRIPTION	MODEL	LOCATION
1	H012 1102	Lens F4.5/19		A-1
2	H012 1101	Lens Block		A-1
3	H012 6003	PCB - SBU - A4		A-1
4	H012 1111	Adjusting Knob - SBU		A-1
5	H012 5008	Harness - VPV/SBU		A-1
6	5466 3198	Washer - SBU		A-1
7	H012 6002	PCB - VPU - A4		A-1
8	H012 5004	Harness - FCU/VPU - A4		A-1
9	H012 1192	Inner Cover - Scanner - Upper		A-2
10	H012 3615	Release Lever - Scanner		A-2
11	H012 3620	Stepped Screw - Scanner - Right		B-1
12	H012 3623	Stepped Screw - Scanner - Left		A-2
13	H012 1191	Inner Cover - R1, R2		A-2
14	H012 3632	Spacer - Locking		A-3
15	H012 3629	Stepped Screw - Locking		A-3
16	H012 3625	Locking Ass'y		A-3
17	H012 3628	Space Roller - Locking		A-3
18	5053 0447	Bushing - M6		A-3
19	H012 1125	Gear - R1/R2 - 24T		A-3
21	H012 1181	Bushing - M6		A-3
22	H012 1124	Gear - Shaft - 17T		B-3
23	H012 1126	Idle Gear - 28T		B-3
24	H012 3631	Locking Spring - Scanner		B-2
25	H012 5018	LED Lamp Ass'y - A4		B-2
26	H012 1115	Separation Roller		B-2
27	H012 1113	Incremental Roller - R1		B-2
28	H012 1114	Incremental Roller - R2		B-2
29	H012 1116	Hinge - ADF		B-2
30	H012 1129	Stopper - Clutch		C-1
31	H012 5013	Clutch ASS'Y - Separation Roller		C-1
32	H012 1127	Inner Cover - Clutch		C-1
35	5474 5052	Ground Wire - Long		C-1
36	5474 1422	Wire - Top Unit		C-2
37	H012 1167	Bracket Ass'y - Hinge		C-2
38	H012 1188	Boss M6		C-2

INDEX	PART NO.	DESCRIPTION	MODEL	LOCATION
39	H012 1103	Exposure Glass		B-1
40	H012 1189	Pulley 28T		C-2
41	H012 1130	Guide Plate - Separation Roller		B-1
42	H012 1106	Holder - Exposure glass - Right		B-1
43	H012 1190	Holder - Exposure Glass - Left		B-1
44	H012 1131	Guide Plate - Scanner		B-1
45	H012 2131	Harness Cover - Thermal Head		B-2
46	H012 1110	Holder - Second Mirror - Left		B-2
47	H012 1105	Second Mirror		B-2
48	H012 1109	Holder - Second Mirror - Right		C-2
49	H012 1100	Scanner Base		B-3
50	H012 1104	First Mirror		C-3
51	H012 1107	Holder - First Mirror - Right		C-3
52	H012 1108	Holder - First Mirror - Left		C-2
53	H012 1193	Inner Cover - Scanner - Front		C-3
54	H012 2118	Plate Spring - Feed Out		C-3
55	H012 2117	Antistatic Brush - Printer A4		C-4
56	H012 2125	Sttept Screw - Thermal Head		B-3
57	H012 2123	Holder - Thermal Head - Left		B-3
58	H012 2126	Bracket - Thermal Head - Left		B-3
59	H012 2128	Plate Spring - Thermal Head		B-4
60	H012 2127	Bracket - Thermal Head - Right		B-3
61	H012 2124	Shaft - Thermal Head		B-4
62	H012 2120	Holder - Thermal Head - Left		A-4
63	H012 2168	Head Spacer		A-4
64	H012 5301	Thermal Head - A4	3	B-4
64	H012 5302	Thermal Head - A4	2	B-4
65	H012 5022	Harness - Thermal Head		B-4
66	H012 1149	Hold Plate		C-3
67	H012 1196	Metal Plate A - Separation		C-3
68	H012 1198	Mylar Separation		C-3
69	H012 1154	Separation Rubber Plate		C-3
70	H012 1147	Metal Plate B - Separation		C-3
71	H012 1157	Metal Plate C - Separation		C-3
72	H012 1183	White Mylar - A4		D-1

3. UPPER UNIT



3. UPPER UNIT

INDEX	PART NO.	DESCRIPTION	MODEL	LOCATION
73	H012 1117	Antistatic Brush - A4 Document		D-2
74	H012 1133	ADF Base Plate		D-2
75	H012 1144	Pressure Roller		C-2
76	H012 1145	Shaft - Pressure Roller R1		D-2
77	H012 1184	Plate Spring - Pressure Roller		D-2
78	H012 5020	Document Sensor - SB1		D-2
79	H012 5019	Document Sensor - SB2		D-1
80	H012 1171	Lock Lever - ADF Right		D-1
81	H012 1170	Shaft - Lock Lever - ADF		D-2
82	H012 1173	Spring - Lock Lever - ADF		C-2
83	H012 1172	Lock Lever - ADF Left		C-2
84	H012 1185	White Clip - ADF		D-1
85	H012 1162	Side Plate - Scanner - Left		B -3
86	H012 1158	Side Plate - Scanner - Right		B-2
100	0950 3008B	Sems Screw - M3 x 8		A-2
101	0951 3005B	Philips Screw with Flat Washer - M3 x 5		A-1
103	0573 0040E	Hexagon Headless Set Screw - M3 x 4		C-2
104	0313 0080B	Philips Pan Head Screw - M3 x 8		D-2
106	0801 1176	Philips Screw - M3 x 10		A-1
107	0313 0050B	Philips Pan Head Screw - M3 x 5		A-1
108	1105 0076	TY - Wrap		A-1
109	0951 3012B	Philips Screw with Flat Washer - M3 x 12		A-1
111	1105 0016	Nylon Clip - 4N		B-3

INDEX	PART NO.	DESCRIPTION	MODEL	LOCATION

PARTS INDEX

Note

★ . . . . . Same as FAX60 (K55)

Parts No.	Description	Page and Index No.	Same as K55
H012 1100	Scanner Base	7- 49	
H012 1101	Lens Block	7- 2	
H012 1102	Lens F4.5/19	7- 1	
H012 1103	Exposure Glass	7- 39	
H012 1104	First Mirror	7- 50	
H012 1105	Second Mirror	7- 47	
H012 1106	Holder - Exposure Glass - Right	7- 42	
H012 1107	Holder - First Mirror - Right	7- 51	
H012 1108	Holder - First Mirror - Left	7- 52	
H012 1109	Holder - Second Mirror - Right	7- 48	
H012 1110	Holder - Second Mirror - Left	7- 46	
H012 1111	Adjusting Knob - SBU	7- 4	
H012 1113	Incremental Roller - R1	7- 27	
H012 1114	Incremental Roller - R2	7- 28	
H012 1115	Separation Roller	7- 26	
H012 1116	Hinge - ADF	7- 29	
H012 1117	Antistatic Brush - A4 Document	7- 73	
H012 1118	Motor Bracket Ass'y	5- 42	
H012 1121	Timing Belt - 80T	5- 40	
H012 1122	Idle Pulley 14/35T	5- 41	
H012 1124	Gear - Shaft - 17T	7- 22	
H012 1125	Gear - R1/R2 - 24T	7- 19	
H012 1126	Idle Gear - 28T	7- 23	
H012 1127	Inner Cover - Clutch	7- 32	
H012 1129	Stopper - Clutch	7- 30	
H012 1130	Guide Plate - Separation Roller	7- 41	
H012 1131	Guide Plate - Scanner	7-44	
H012 1133	Base - ADF	3- 17	
H012 1133	ADF Base Plate	7- 74	
H012 1144	Pressure Roller	7- 75	
H012 1145	Shaft - Pressure Roller R1	7- 76	
H012 1147	Metal Plate B - Separation	7- 70	
H012 1149	Hold Plate	7- 66	
H012 1154	Separation Rubber Plate	7- 69	
H012 1157	Metal Plate C - Separation	7- 71	

Parts No.	Description	Page and Index No.	Same as K55
H012 1158	Side Plate - Scanner - Right	7- 86	
H012 1162	Side Plate - Scanner - Left	7- 85	
H012 1167	Bracket Ass'y - Hinge	7- 37	
H012 1170	Shaft - Lock Lever - ADF	7- 81	
H012 1171	Lock Lever - ADF Right	7- 80	
H012 1172	Lock Lever - ADF Left	7- 83	
H012 1173	Spring - Lock Lever - ADF	7- 82	
H012 1181	Bushing - M6	7- 21	
H012 1183	White Mylar - A4	7- 72	
H012 1184	Plate Spring - Pressure Roller	7- 77	
H012 1185	White Clip - ADF	7- 84	
H012 1188	Boss M6	7- 38	
H012 1189	Pulley 28T	7- 40	
H012 1190	Holder - Exposure Glass - Left	7- 43	
H012 1191	Inner Cover - R1, R2	7- 13	
H012 1192	Inner Cover - Scanner - Upper	7- 9	
H012 1193	Inner Cover - Scanner - Front	7- 53	
H012 1196	Metal Plate A - Separation	7- 67	
H012 1198	Mylar Separation	7-68	
H012 2103	Metal Base	5- 23	
H012 2109	Shaft - Paper Stopper	5- 21	
H012 2110	Insulating Sheet -Metal Base	5- 25	
H012 2111	Rubber Foot - Front	5- 26	
H012 2112	Pulley - Feed Out Roller - A4	5- 33	
H012 2113	Pulley - Platen Roller - A4	5- 29	
H012 2114	Belt - Feed Out	5- 28	
H012 2115	Feed Out Roller - A4	5- 35	
H012 2117	Antistatic Brush - Printer A4	7- 55	
H012 2118	Plate Spring - Feed Out	7-54	
H012 2119	Bushing - M4	5- 34	
H012 2120	Holder - Thermal Head - Left	7- 62	
H012 2123	Holder - Thermal Head - Left	7- 57	
H012 2124	Shaft - Thermal Head	7- 61	
H012 2125	Sttept Screw - Thermal Head	7- 56	
H012 2126	Bracket - Thermal Head - Left	7- 58	

Parts No.	Inscription	Page and Index No.	Same as K55
H012 2127	Bracket - Thermal Head - Right	7- 60	
H012 2128	Plate Spring - Thermal Head	7- 59	
H012 2131	Harness Cover - Thermal Head	7- 45	
H012 2133	Cover Jam Removal	5- 47	
H012 2136	Platen Roller - A4	5- 31	
H012 2137	Gear - Platen Roller - 39T	5- 32	
H012 2138	Idle Gear 1 - Printer - 33T	5- 39	
H012 2139	Idle Gear 2 - Printer - 53/15T	5- 38	
H012 2148	Cover - Roll Paper	3- 6	
H012 2149	Harness Cover	5- 24	
H012 2151	Holder - Harness - Front Right	5- 43	
H012 2153	Harness Holder - Left	5- 55	
H012 2158	Bracket - Rx Motor	5- 46	
H012 2159	Paper Spacer - Right	3- 12	
H012 2160	Paper Spacer - Left	3- 13	
H012 2161	Base	3-11	
H012 2167	Holder - Jam Sensor	5- 36	
H012 2168	Head Spacer	7- 63	
H012 2169	Spacer PSU	5- 8	
H012 2182	Cutter Ass'y - A4	5- 48	
H012 3615	Release Lever - Scanner	7- 10	
H012 3619	Holder - Speaker	5- 15	
H012 3620	Stepped Screw - Scanner - Right	7-11	
H012 3622	Bracket - Door Switch	5- 18	
H012 3623	Stepped Screw - Scanner - Left	7- 12	
H012 3625	Locking Ass'y	7- 16	
H012 3628	Space Roller - Locking	7- 17	
H012 3629	Stepped Screw - Locking	7- 15	
H012 3631	Locking Spring - Scanner	7- 24	
H012 3632	Spacer - Locking	7- 14	
H012 3634	Holder - MBU	5- 11	
H012 3660	Side Cover - Left	3- 7	
H012 3661	Side Cover - Right	3- 14	
H012 3663	Front Cover	3- 26	
H012 3665	Top Cover	3- 16	

Parts No.	Description	Page and Index No.	Same as K55
H012 3670	Bottom Cover - Op-Port	3- 22	
H012 3671	Inner Cover - Op-Port	3- 21	
H012 3672	Jack Cover	5- 19	*
H012 3673	NCU Cover	3- 8	*
H012 3675	PSU Cover	3- 9	
H012 3704	Op-Port Ass'y - FAX1O - German	3- 24	
H012 3705	Op-Port Ass'y - FAX1O - English	3- 24	
H012 3706	Op-Port Ass'y - FAX1O - Italian	3- 24	
H012 3707	Operator Manual - FAX1O - German	3- *	
H012 3708	Operator Manual - FAX10 - English	3- *	
H012 3709	Operator Manual - FAX1O - Italian	3- *	
H012 4653	Basic Operator Manual - FAX20 - Italian	3- *	
H012 4655	Basic Operator Manual - FAX1O - English	3- *	
H012 4657	Basic Operator Manual - FAX1O - Italian	3- *	
H012 4683	Original Tray	3- 27	
H012 4804	Decal - Paper Jam	5- 50	
H012 4807	Decal - Paper Replacement--German	3- 15	
H012 4808	Decal - Paper Replacement--English	3- 15	
H012 4809	Decal - Paper Replacement--Italian	3- 15	
H012 4810	Decal - Paper Guide - German	5- 49	
H012 4811	Decal - Paper Guide - English	5- 49	
H012 4812	Decal - Paper Guide - Italian	5- 49	
H012 5000	Tx Motor Ass'y	5- 44	
H012 5001	Rx Motor Ass'y	5- 45	
H012 5004	Harness - FCU/VPU - A4	7- 8	
H012 5005	Harness - FCU/OPU - A4	3- 25	
H012 5008	Harness - VPV/SBU	7- 5	
H012 5009	Harness - FCU/PSU	5- 4	*
H012 5010	Harness - FCU/FPD	5- 10	*
H012 5013	Clutch ASS'Y - Separation Roller	7- 31	
H012 5014	Door Switch - SB1O	5- 17	*
H012 5016	Paper Sensor - SB4	5- 27	*
H012 5017	Jam Sensor - SB5	5- 37	*
H012 5018	LED Lamp Ass'y - A4	7- 25	
H012 5019	Document Sensor - SB2	7- 79	

Parts No.	Description	Page and Index No.	Same as K55
H012 5020	Document Sensor - SB1	7- 78	
H012 5022	Harness - Thermal Head	7- 65	
H012 5025	Harness -FCU/OPU - A4	3- 25	
H012 5026	Ground Wire - FCU/PSU	5- 7	*
H012 5301	Thermal Head - A4	7- 64	
H012 5302	Thermal Head - A4	7- 64	
H012 5403	PSU - 220V, A4	5- 51	
H012 6002	PCB - VPU - A4	7- 7	
H012 6003	PCB - SBU - A4	7- 3	
H012 6006	PCB - OP-Port - FAX10	3- 23	
H012 6009	PCB - NCU	5- 2	*
H012 6014	PCB - FPD	5- 9	*
H012 6015	PCB - MIF	5- 13	*
H012 6023	PCB - MBU - FAX10 - German	5- 12	
H012 6024	PCB - MBU - FAX10 - English	5- 12	
H012 6025	PCB - MBU - FAX10 - Italian	5- 12	
H012 6026	PCB - FCU	5- 3	*
H013 3117	Heat Shield Sheet	5- 54	
H013 3120	Insulating Sheet	5- 53	
H013 4115	Operator Manual - FAX20 - German	3- *	
H013 4116	Operator Manual - FAX20 - English	3- *	
H013 4117	Operator Manual - FAX20 - Italian	3- *	
H013 4203	Addresses Card	3- 19	
H013 4204	Seal Addresses Card	3- 20	
H013 4653	Basic Operator Manual - FAX20 - German	3- *	
H013 4655	Basic Operator Manual - FAX20 - English	3- *	
H013 4657	Basic Operator Manual - FAX20 - Italian	3- *	
H013 5011	Modular Jack Ass'y	5- 20	
H013 5012	Speaker Ass'y - A4	5- 16	
H013 5208	Op-Port Ass'y - FAX20 - German	3- 24	
H013 5209	Op-Port Ass'y - FAX20 - English	3- 24	
H013 5210	Op-Port Ass'y - FAX20 - Italian	3- 24	
H013 6010	PCB - OP-Port - FAX20	3-23	
H013 6023	PCB - MBU - FAX20 - German	5- 12	
H013 6024	PCB - MBU - FAX20 - English	5- 12	

Parts No.	Description	Page and Index No.	Same as K55
H013 6025	PCB - MBU - FAX20 - Italian	5- 12	
H014 5024	Ground Wire Ass'y	5- 6	*
H015 4800	Decal - Power Switch	3- 10	*

Parts No.	Description	Page and Index No.	Same as K55
5053 0447	Bushing – M6	7– 18	*
5466 3198	Washer – SBU	7– 6	*
5474 1422	Wire – Top Unit	7– 36	
5474 2152	Bushing – Platen Roller	5– 30	*
5474 3244	Rubber Foot – Rear	5– 22	*
5474 5052	Ground Wire – Long	7– 35	
5474 6024	PCB Ass'y – V96F Modem	5– 14	*

Parts No.	Description	Page and Index No.	Same as K55
0313 0050B	Philips Pan Head Screw - M3 x 5	7-107	
0313 0080B	Philips Pan Head Screw - M3 x 8	7-104	
0323 0060B	Philips Sunk Screw – M3 x 6	3-102	
0573 0040E	Hexagon Headless Set Screw – M3 x 4	7–103	
0720 0030E	Retaining Ring – M3	5–107	
0720 0040E	Retaining Ring – M4	5–101	
0720 0060E	Retaining Ring – M6	5–106	
0801 1176	Philips Screw – M3 x 10	7–106	
0950 3008B	Sems Screw – M3 x 8	7–100	
0951 3005B	Philips Screw with Flat Washer – M3 x 5	3–105	
0951 3005B	Philips Screw with Flat Washer – M3 x 5	5–103	
0951 3005B	Philips Screw with Flat Washer – M3 x 5	7–101	
0951 3008B	Philips Screw with Flat Washer – M3 x 8	3–104	
0951 3008B	Philips Screw with Flat Washer – M3 x 8	5–110	
0951 3008B	Philips Screw with Flat Washer – M3 x 8	5–114	
0951 3012B	Philips Screw with Flat Washer – M3 x 12	5–112	
0951 3012B	Philips Screw with Flat Washer – M3 x 12	7–109	
0951 4006B	Philips Screw with Flat Washer – M4 x 6	3–103	
0965 3006B	Tapping Screw with Flat Washer – M3 x 6	3–100	
0965 3006B	Tapping Screw with Flat Washer – M3 x 6	5–102	
0965 3008B	Tapping Screw with Flat Washer – M3 x 8	3–101	
1105 0016	Nylon Clip – 4N	7–111	
1105 0076	TY -Wrap	5–108	
1105 0076	TY – Wrap	7–108	

RICOH

PARTS CATALOG

FOR

RICOH FAX 60 (For Europe)
[K 55]

August 1, 1987

RICOH COMPANY, LTD.

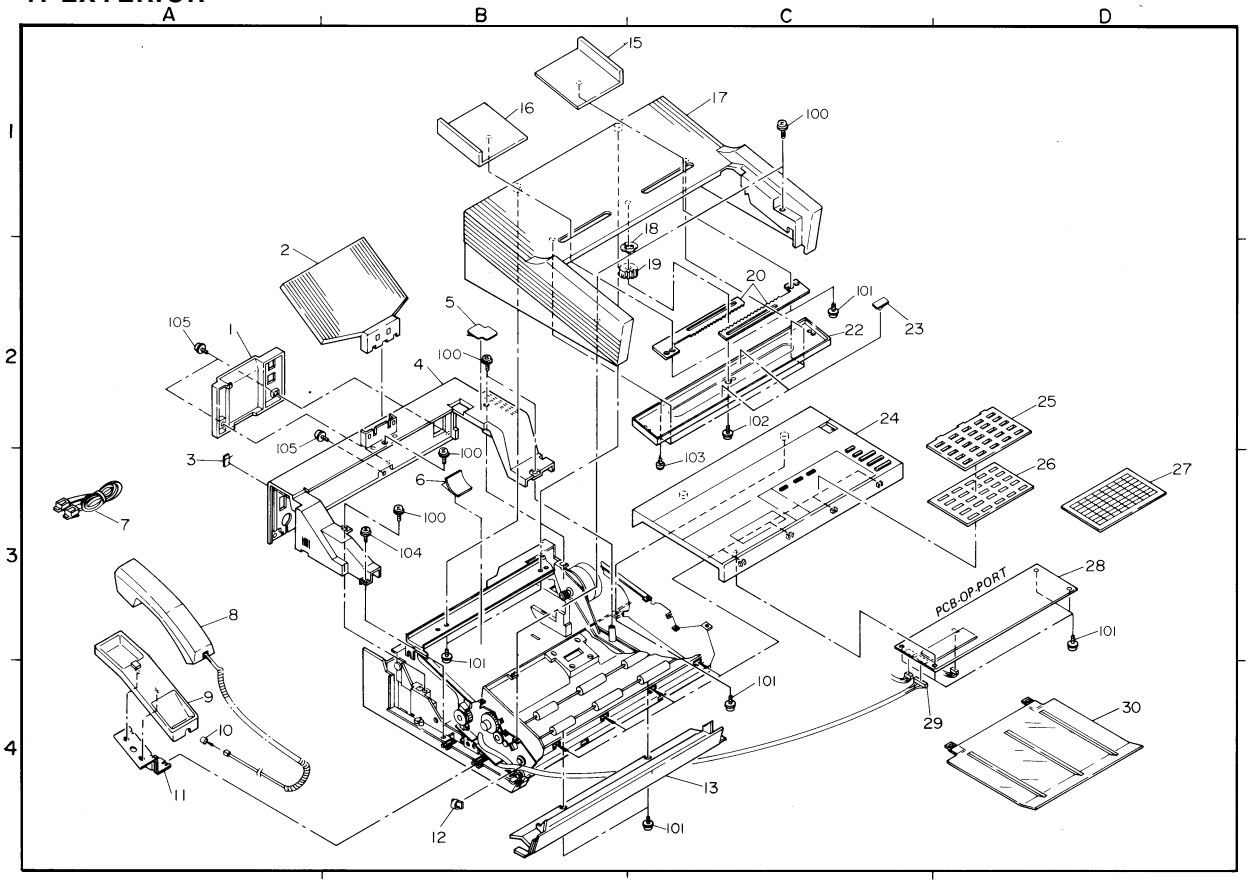
PARTS CATALOG

INTRODUCTION

This chapter instructs you the numbers and names of this parts on this machine.

INDEX to PARTS CATALOG

1. EXTERIOR

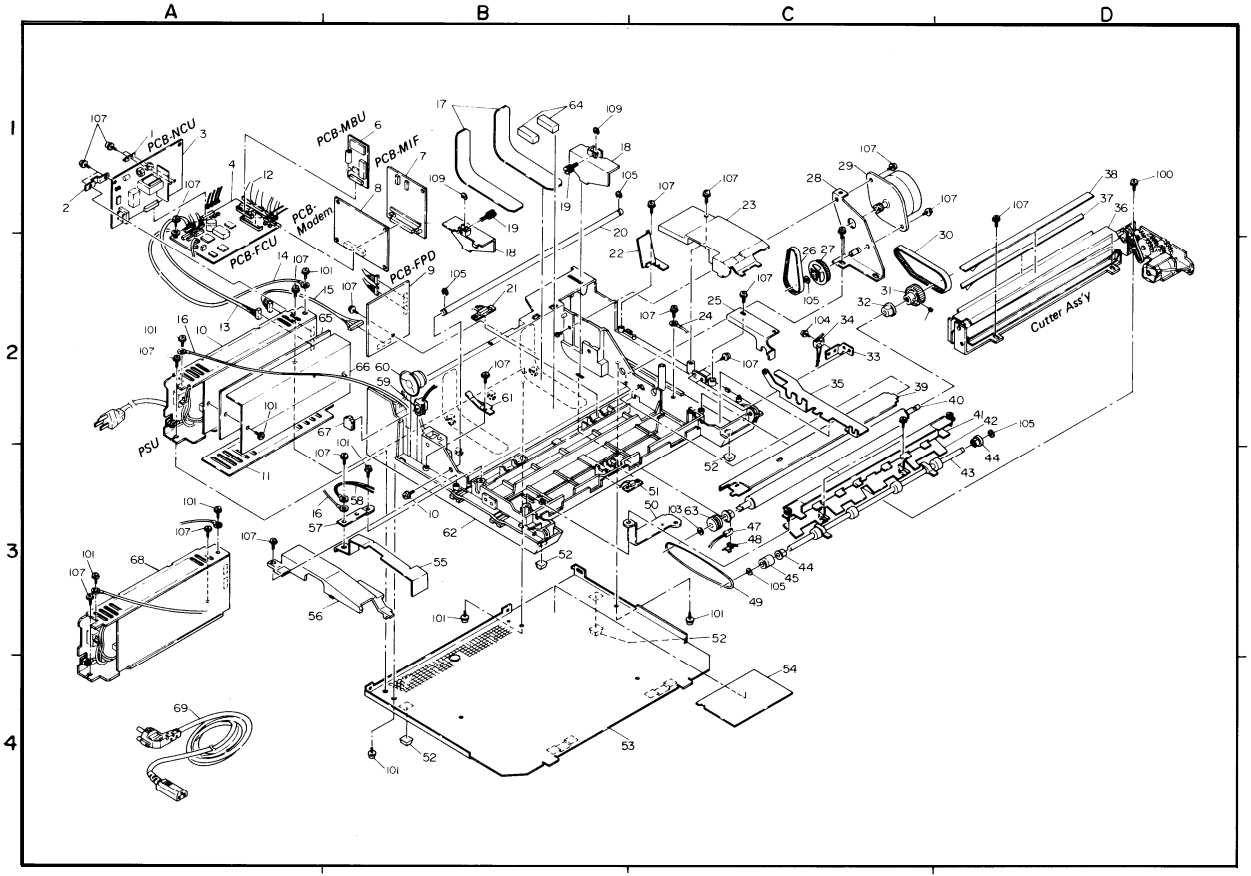


1. EXTERIOR

INDEX	PART NO.	DESCRIPTION	MODEL	LOCATION
*	H015 4660	Operator Manual - FAX60	G	
*	H015 4661	Operator Manual - FAX60	E	
*	H015 4662	Operator Manual - FAX60	I	
*	H015 4653	Basic Operation Manual - FAX60	G	
*	H015 4655	Basic Operation Manual - FAX60	E	
*	H015 4657	Basic Operation Manual - FAX60	I	
1	H012 3673	NCU Cover		A-2
2	H015 3107	Sub Document Table		A-2
3	H015 4800	Decal - Power Switch		A -3
4	H015 3621	Rear Cover		B-2
5	H015 4812	Decal - Paper Replacement	G	B-2
5	H015 4813	Decal - Paper Replacement	E	B-2
5	H015 4814	Decal - Paper Replacement	I	B-2
6	H015 4809	Decal - A4 Roll Holder	G	B-3
6	H015 2810	Decal - A4 Roll Holder	E	B-3
6	H015 4811	Decal - A4 Roll Holder	I	B-3
7		Not Used		
8		Not Used		
9		Not Used		
10		Not Used		
11		Not Used		
12	1105 0109	Cord Keep		B-4
13	H015 3110	Front Cover		C-4
14		Not used		
15	H015 3103	Document Guide - Right		B-1
16	H015 3104	Document Guide - Left		B-1
17	H015 3105	Top Cover		C-1
18	5475 2013	Plate Spring - Pinion		B-2
19	5474 1307	Gear - ADF Tray		B-2
20	H002 2117	Rack - Side Guide		C-2
22	H014 3121	Inner Cover - Top Cover		C-2
23	5475 2047	Sheet - Rack Cover		C-2
24	H015 4683	Op-Port Cover	G	C -2
24	H015 4684	Op-Port Cover	E	C-2
24	H015 4685	Op-Port Cover	I	C -2

INDEX	PART NO.	DESCRIPTION	MODEL	LOCATION
25	H015 3619	Addresses Sheet Cover		D-2
26	H014 4213	Addresses Sheet		D-3
27	H014 4214	Seal - Address Sheet		D-3
28	H015 6010	PCB - Op-Port		D-3
29	H014 5005	Harness - FCU/OPU - A3/B4		C-4
30	H014 4207	Original Tray		D-4
100	0951 3008B	Philips Screw with Flat Washer - M3 x 8		B-2
101	0323 0060B	Philips Sunk Screw - M13 x 6		C-2
102	0965 3005B	Tapping Screw with Flat Washer - M3 x 5		C-2
103	0965 3006B	Tapping Screw with Flat Washer - M3 x 6		B-3
104	0951 3010B	Philips Screw with Flat Washer - M3 x 10		B-3
105	0951 3005B	Philips Screw with Flat Washer - M3 x 5		A-3

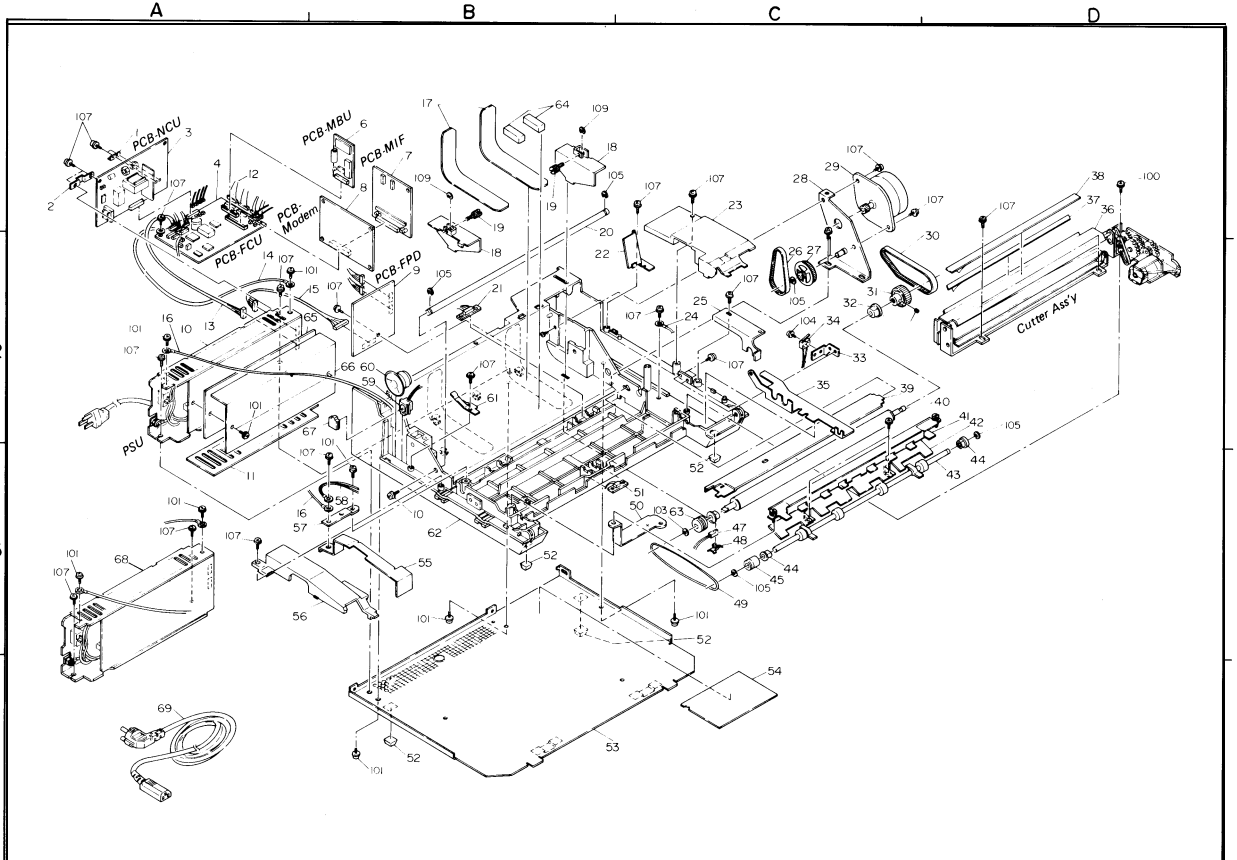
2. LOWER UNIT


A
B
C
D
1
2
3
4
PCB-NCU
PCB-MBU
PCB-MIF
PCB-Modem
PCB-FCU
PCB-FPD
PSU
Cutter Ass'y

2. LOWER UNIT

INDEX	PART NO.	DESCRIPTION	MODEL	LOCATION
1		Not Used		
3	H012 6009	PCB - NCU - JPN/USA		A-1
4	H012 6026	PCB - FCU		A-1
6	H015 6023	PCB - MBU - K55	G	B-1
6	H015 6024	PCB - MBU - K55	E	B-1
6	H015 6025	PCB - MBU - K55	I	B-1
7	H012 6015	PCB - MIF - JPN/USA		B-1
8	5474 6024	PCB Ass'y - V96F Modem		B-1
9	H012 6014	PCB - FPD		B-2
10		Not Used		
11	H014 2177	Spacer - B4 - PSU		A-3
12	H014 5005	Harness - FCU/OPU - A3/B4		A-1
13	H012 5009	Harness - FCU/PSU		A-2
14	H012 5026	Ground Wire - FCU/PSU		A-2
15	H012 5010	Harness - FCU/FPD		A-2
16	H014 5024	Ground Wire Ass'y		A-2
17	H014 2171	Sheet - Paper Holder		A-2
20	H014 2187	Shaft - Paper Stopper		B-1
21	H012 5016	Paper Sensor - SB4		B-2
22	H014 2164	Harness Holder - Motor		B-2
23	H014 3129	Inner Cover - Right		C-1
24	H014 5024	Ground Wire Ass'y		C-2
25	H014 2163	Harness Holder - Cutter		C-2
26	H014 2159	Timing Belt - 83T		C-2
27	H014 2102	Pulley - 66T - Plotter		C-2
28	H014 2112	Bracket - RX Motor		C-2
29	H014 5000	Rx Motor Ass'y - A3/B3		C-1
30	H014 2160	Timing Belt - 97T		C-1
31	H014 2104	Pulley - 39T - Platen Roller		C-2
32	5474 2152	Bushing - Platen Roller		C-2
33	H014 2143	Bracket - Door Switch		C-2
34	H012 5014	Door Switch - SB10		C-2
35	H015 2166	Ground Plate - Platen Roller		C-2
36	H015 2101	Cutter Ass'y - B4		D-1
37	H015 4818	Decal - Paper Guide	G	D-1
37	H015 4819	Decal - Paper Guide	E	D-1
37	H015 4820	Decal - Paper Guide	I	D-1
38	H015 4815	Decal - Paper Jam	G	D-1
38	H015 4816	Decal - Paper Jam	E	D-1
38	H015 4817	Decal - Paper Jam	I	D-1
39	H014 2137	Guide Plate - Lower - Platen Roller		C-2
40	H014 2107	Platen Roller		D-2
41	H014 2150	Guide Plate - Upper - Feed Out		D-2
42	H014 2136	Guide Plate - Lower - Feed Out		D-2
43	H014 2108	Feed Out Roller		D-3
44	5053 0447	Bushing - M6		D-3
45	H014 2106	Pulley - Feed Out Roller		C-3
47	H014 5015	Paper Width Sensor - SB6		C-3
48	H014 2157	Fixing Plate - SB6		C-3
49	H014 2111	Belt - Feed Out Roller		C-3
50	H015 2165	Ground Plate - Guide Plate		C-3
51	H012 5017	Jam Sensor - SB5		C-3
52	5474 3244	Rubber Foot		C-3
53	H014 2158	Base Ass'y		B-4
54	H014 2161	Insulating Sheet		C-4
55	H014 2178	Harness Guide Cover		B-3
56	H014 3128	Inner Cover - Left		A-3
57	H014 2176	Ground Plate - Guide Plate		A-3
58	H014 5026	Ground Wire - Scanner		B-3
59	H014 5011	Harness - Handset/FCU		B-2
60	H014 5012	Monitor - Speaker		B-2
61	H014 2140	Fixing Plate - Speaker		B-2
62	H015 2100	Base - K55		B-3
63	H014 2105	Pulley - Platen Roller		C-3
64	H014 2185	Stopper - Thermal Head		B-1
65	H013 3120	Insulating Sheet		A-2
66	H014 3131	Heat Shield Sheet		A-2
67	H012 3672	Modular - Jack Cover		A-3
68	H014 5403	PSU - 220V, A3		A-3
69		Not Used		A-4

2. LOWER UNIT

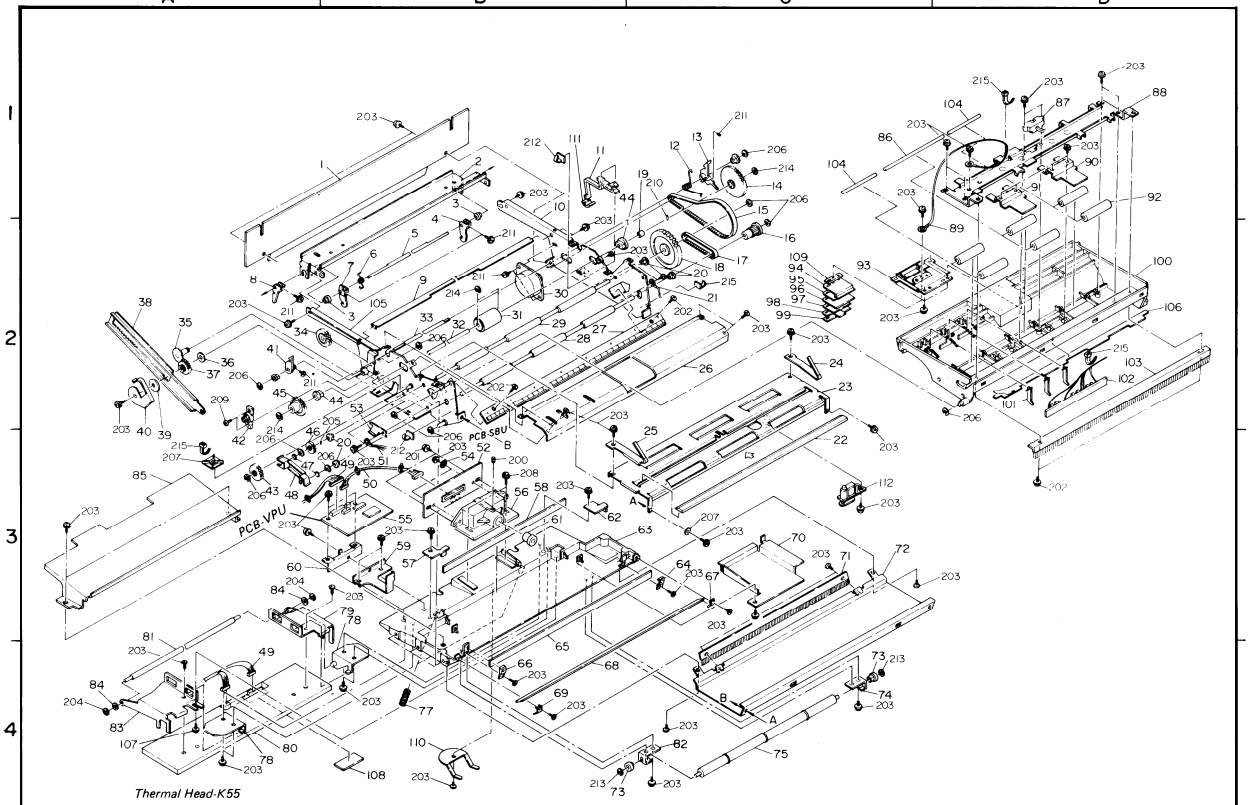

A
B
C
D
1
2
3
4
PCB-NCU
PCB-MBU
PCB-MIF
PCB-Modem
PCB-FCU
PCB-FPD
PSU
Cutter Ass'y

2. LOWER UNIT

INDEX	PART NO.	DESCRIPTION	MODEL	LOCATION
101	0951 3005B	Philips Screw with Flat Washer – M3 x 5		A-2
103	0720 0060E	Retaining Ring – M6		C -3
105	0720 0040E	Retaining Ring – M4		C-3
107	0313 0060B	Philips Pan Head Screw – M3 x 6		B-2
109	0720 0030E	Retaining Ring – M3		B-1

INDEX	PART NO.	DESCRIPTION	MODEL	LOCATION

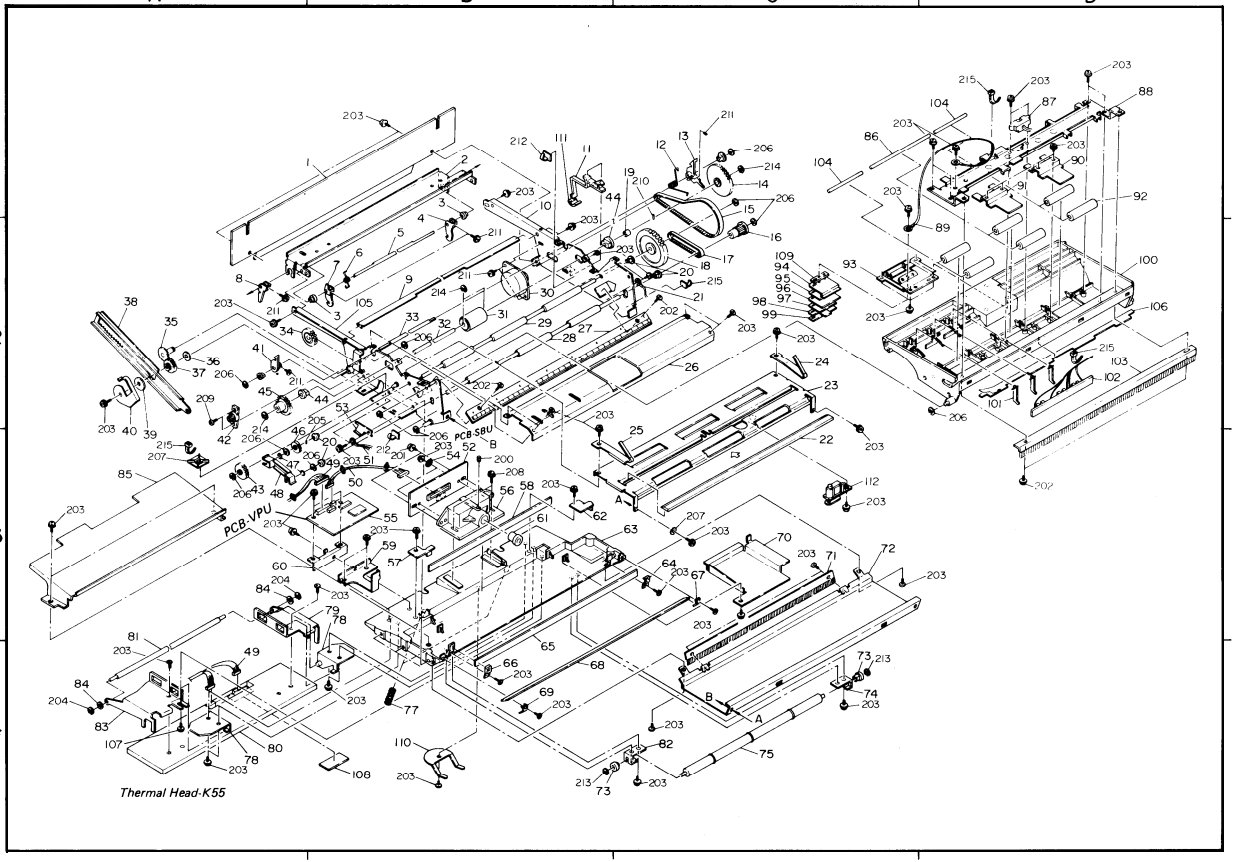
3. UPPER UNIT



3. UPPER UNIT

INDEX	PART NO.	DESCRIPTION	MODEL	LOCATION
1	H015 1600	Inner Cover - SBU		A-1
2	H014 3122	Bracket - Upper Unit		B-1
3	H014 3107	Bushing - Locking Lever		B-2
4	H014 3108	Locking Lever - Right		B-2
5	H014 3106	Shaft - Locking Lever		B-2
6	H014 3123	Spring - Lock Lever - Left		B-2
7	H014 3109	Locking Lever - Left		B-2
8	H014 3110	Release Button - Locking Lever		A-2
9	H014 1201	Shaft - Scanner		B-2
10	H014 1108	Side Plate - Right		B-1
11	H014 3127	Arm - Inner Lock		B-1
12	H014 1340	Spring - Locking Lever		C-1
13	H014 1331	Locking Lever - Right - ADF		C-1
14	H014 1141	Gear - 60T - ADF		C-1
15	H014 1138	Timing Belt - 130T		C-1
16	H014 1137	Pulley - R2		C-2
17	H014 1181	Timing Belt - 77T		C-2
18	H014 1136	Gear - 28T - R1		C-2
19	H014 1167	Spacer - 8mm		C-2
20	5053 0447	Bushing - M6		C-2
21	H014 5024	Ground Wire Ass'y		C-2
22	H014 1120	Exposure Glass		C-3
23	H014 1117	Guide Plate - Scanner		C-2
24	H014 1172	Holder - Right - Exposure Glass		C-2
25	H014 1171	Holder - Left.- Exposure Glass		C-3
26	H014 1302	Guide Plate - Separation Plate		C-2
27	H015 5018	Led Ass'y - A3		B-2
28	H014 1116	Incremental Roller - R2		B-2
29	H014 1115	Incremental Roller - R1		B-2
30	H014 5001	Tx Motor Ass'y - A3/B3		B-2
31	H014 1325	Separation Roller - ADF		B-2
32	H014 1333	Shaft - Separation Roller		B-2
33	H014 1334	Shaft - Pick Up Roller		B-2
34	H014 1161	Gear - 32T - Locking Mechanism		A-2
35	H014 1158	Gear - 50T - Locking Mechanism		A-2

INDEX	PART NO.	DESCRIPTION	MODEL	LOCATION
36	H014 1165	Washer - M3.2		A-2
37	H014 1175	Gear - 12T - Damper		A-2
38	H014 1151	Arm - Locking Mechanism		A-2
39	H014 1182	Roller - Locking Mechanism		A-3
40	H014 1191	Stopper - Locking Mechanism		A-3
41	H014 1330	Locking Lever - Left - ADF		A-2
42	H014 1196	Oil Dumper		A-3
43	H014 1321	Idle Gear - 25T - Scanner		A-3
44	5053 0223	Bushing - 8mm		B-2
45	H014 1323	Gear - 45T - Scanner		B-2
46	H014 1322	Gear - 21T - Scanner		B-3
47	H014 1195	Retaining Ring - M3.8		A-3
48	H014 1194	Platen Spring - Brake		A-3
49	H014 5023	Harness - FCU/VPU/HEAD/PSU		B-3
50	H014 5008	Harness - VPU/SBU - A3/B4		B-3
51	H014 5026	Ground Wire - Scanner		B-3
52	H015 6003	PCB - SBU		B-3
53	H014 1198	Protector - Harness		B-3
54	5466 3198	Washer - SBU		B-3
55	H015 6002	PCB -VPU-A3		B-3
56	H014 1102	Lens Block		B-3
57	H015 1104	Mirror Holder 2 - Left		B-3
58	H015 1101	Second Mirror		B-3
59	H014 1192	Bracket - VPU - 1		B-3
60	H014 1193	Bracket - VPU - 2		A-3
61	H014 1101	Lens - F22.6		B-3
62	H015 1105	Mirror Holder 2 - Right		B-3
63	H015 1100	Base - Scanner		C-3
64	H014 1135	Mirror Holder 3 - Right		C-3
65	H014 1114	Third Mirror		B-4
66	H014 1134	Mirror Holder 3 - Left		B-4
67	H014 1131	Mirror Holder 1 - Right		C-3
68	H014 1112	First Mirror		B-4
69	H014 1130	Mirror Holder 1 - Left		B-4
70	H014 1180	Inner Cover - Motor		C-3


A
B
C
D
1
2
3
4
PCB-VPU
PCB-S8U
Thermal Head-K55

3. UPPER UNIT

INDEX	PART NO.	DESCRIPTION	MODEL	LOCATION
71	H014 2132	Antistatic Brush - Printer		C-4
72	H014 1142	Cover - Printer		C-3
73	H014 2131	Bushing - M4		C -4
74	H014 2128	Bracket - Right - Pressure Roller		C-4
75	H014 2125	Pressure Roller - Printer		C -4
77	H014 2175	Spring - Terminal Head		B-4
78	H014 2118	Bracket - Thermal Head Ass'y		A-4
79	H014 2121	Bracket - Left - Thermal Head		A-4
80	H014 5301	Thermal Head - K55		A-4
81	H014 2122	Shaft - Terminal Head		A-4
82	H014 2129	Bracket - Left - Pressure Roller		C-4
83	H014 2120	Bracket - Right - Terminal Head		A-4
84	H002 2226	Bushing - mm - Platen Roller		A-4
85	H014 1179	Shield Plate - Scanner Base		A-3
86	H014 1187	Long Shaft - Pressure Roller - ADF		C-1
87	H014 5022	Document Sensor - SB2		D-1
88	H014 1341	Bracket - ADF Base		D-1
89	H014 5024	Ground Wire Ass'y		C-1
90	H014 1190	Pressure Plate - Roller - Right		D-1
91	H014 1189	Pressure Plate - Roller - Left		D-1
92	H014 1123	Pressure Roller		D-1
93	H014 1339	Bracket - Separation		C-2
94	H014 1309	Metal Plate C - Separation		C-2
95	H014 1345	Metal Plate B - Separation		C-2
96	H014 1315	Separation Rubber Plate		C-2
97	H014 1344	Guide Plate - Separation Rubber		C-2
98	H014 1342	Feed Plate - Separation		C-2
99	H014 1336	Metal Plate C - Separation		C-2
??	H012 2168	Spacer Head		
100	H014 1301	Base - ADF		D-2
101	H014 1319	Shutter - Document Sensor		D-2
102	H015 5019	Document Sensor - SB1, 3		D-2
103	H014 1335	Antistatic Brush - Document		D-2
104	H014 1188	Short Shaft - Pressure Roller - ADF		D-1
105	H014 1103	Side Plate - Left		
106	H014 1121	White Mylar		D-2
107	H014 1174	Clamp		
107	H014 2173	Stepped Screw - M3 x 5.7		
108	H014 2180	Black Sheet - 2 0 x 2 0 m m		B-4
109	H014 1346	Spacer - ADF		C-1
110	H015 2167	Ground Plate - Feed Out		B-4
111	H014 3132	Guide Arm - Inner Lock		B-1
200	0573 0040E	Hexagon Headless Set Screw - M3 x 4		B-3
201	0950 3008B	Sems Screw - M3 x 8		B-3
202	0313 0080B	Philips Pan Head Screw - M3 x 8		D-3
203	0951 3005B	Philips Screw with Flat Washer - M3 x 5		B-3
204	0720 0025E	Retaining Ring - M2.5		A-3
205	0632 0080	Parallel Pin - M2 x 8		B-3
206	0720 0040E	Retaining Ring - M4		B-3
207	0705 0030C	Toothed Washer - M3		C-3
208	0801 1176	Philips Screw - M3 x 10		B-3
210	0632 0120G	Parallel Pin - M2 x 12		B-4
211	0313 0060B	Philips Pan Head Screw - M3 x 6		B-2
211	1105 0076	TY - Wrap		B-3
212	1105 0109	Cord Keep		B-3
213	0720 0030E	Retaining Ring - M3		C-4
214	0720 0060E	Retaining Ring - M6		C-1
215	1105 0076	TY - Wrap		D-2

PARTS INDEX

Note

★ . . . . . Same as FAX10/20 (K52/53)

Parts No.	Description	Page and Index No.	Same as K52/53
H002 2117	Rack - Side Guide	3- 20	
H002 2226	Bushing - mm - Platen Roller	7- 84	
H012 2168	Spacer Head	7- ??	
H012 3672	Modular - Jack Cover	5- 67	*
H012 3673	NCU Cover	3- 1	*
H012 5009	Harness - FCU/PSU	5- 13	*
H012 5010	Harness - FCU/FPD	5- 15	*
H012 5014	Door Switch - SB10	5- 34	*
H012 5016	Paper Sensor - SB4	5- 21	*
H012 5017	Jam Sensor - SB5	5- 51	*
H012 5026	Ground Wire - FCU/PSU	5- 14	*
H012 6009	PCB - NCU - JPN/USA	5- 3	*
H012 6014	PCB - FPD	5- 9	*
H012 6015	PCB - MIF - JPN/USA	5- 7	*
H012 6026	PCB - FCU	5- 4	*
H013 3120	Insulating Sheet	5- 65	
H014 1101	Lens - F22.6	7- 61	
H014 1102	Lens Block	7- 56	
H014 1103	Side Plate - Left	7-105	
H014 1108	Side Plate - Right	7- 10	
H014 1112	First Mirror	7- 68	
H014 1114	Third Mirror	7- 65	
H014 1115	Incremental Roller - R1	7- 29	
H014 1116	Incremental Roller - R2	7- 28	
H014 1117	Guide Plate - Scanner	7- 23	
H014 1120	Exposure Glass	7- 22	
H014 1121	White Mylar	7-106	
H014 1123	Pressure Roller	7- 92	
H014 1130	Mirror Holder 1 - Left	7- 69	
H014 1131	Mirror Holder 1 - Right	7- 67	
H014 1134	Mirror Holder 3 - Left	7- 66	
H014 1135	Mirror Holder 3 - Right	7- 64	
H014 1136	Gear - 28T - R1	7- 18	
H014 1137	Pulley - R2	7- 16	
H014 1138	Timing Belt - 130T	7- 15	

Parts No.	Description	Page and Index No.	Same as K52/53
H014 1141	Gear - 60T - ADF	7- 14	
H014 1142	Cover - Printer	7- 72	
H014 1151	Arm - Locking Mechanism	7-38	
H014 1158	Gear - 50T - Locking Mechanism	7- 35	
H014 1161	Gear - 32T - Locking Mechanism	7-34	
H014 1165	Washer - M3.2	7- 36	
H014 1167	Spacer - 8mm	7- 19	
H014 1171	Holder - Left - Exposure Glass	7- 25	
H014 1172	Holder - Right - Exposure Glass	7- 24	
H014 1174	clamp	7-107	
H014 1175	Gear - 12T - Damper	7-37	
H014 1179	Shield Plate - Scanner Base	7- 85	
H014 1180	Inner Cover - Motor	7- 70	
H014 1181	Timing Belt - 77T	7- 17	
H014 1182	Roller - Locking Mechanism	7-39	
H014 1187	Long Shaft - Pressure Roller - ADF	7- 86	
H014 1188	Short Shaft - Pressure Roller - ADF	7-104	
H014 1189	Pressure Plate - Roller - Left	7- 91	
H014 1190	Pressure Plate - Roller - Right	7-90	
H014 1191	Stopper - Locking Mechanism	7- 40	
H014 1192	Bracket - VPU - 1	7-59	
H014 1193	Bracket - VPU - 2	7- 60	
H014 1194	Platen Spring - Brake	7-48	
H014 1195	Retaining Ring - M3.8	7- 47	
H014 1196	Oil Dumper	7-42	
H014 1198	Protector - Harness	7- 53	
H014 1201	Shaft - Scanner	7- 9	
H014 1301	Base - ADF	7-100	
H014 1302	Guide Plate - Separation Plate	7-26	
H014 1309	Metal Plate C - Separation	7- 94	
H014 1315	Separation Rubber Plate	7-96	
H014 1319	Shutter - Document Sensor	7-101	
H014 1321	Idle Gear - 25T - Scanner	7-43	
H014 1322	Gear - 21T - Scanner	7- 46	
H014 1323	Gear - 45T - Scanner	7-45	

Parts No.	Description	Page and Index No.	Same as K52/53
H014 1325	Separation Roller - ADF	7- 31	
H014 1330	Locking Lever - Left - ADF	7- 41	
H014 1331	Locking Lever - Right - ADF	7- 13	
H014 1333	Shaft - Separation Roller	7- 32	
H014 1334	Shaft - Pick Up Roller	7- 33	
H014 1335	Antistatic Brush - Document	7-103	
H014 1336	Metal Plate C - Separation	7- 99	
H014 1339	Bracket - Separation	7- 93	
H014 1340	Spring - Locking Lever	7- 12	
H014 1341	Bracket - ADF Base	7- 88	
H014 1342	Feed Plate - Separation	7- 98	
H014 1344	Guide Plate - Separation Rubber	7- 97	
H014 1345	Metal Plate B - Separation	7- 95	
H014 1346	Spacer - ADF	7-109	
H014 2102	Pulley - 66T - Plotter	5- 27	
H014 2104	Pulley - 39T - Platen Roller	5- 31	
H014 2105	Pulley - Platen Roller	5- 63	
H014 2106	Pulley - Feed Out Roller	5-45	
H014 2107	Platen Roller	5- 40	
H014 2108	Feed Out Roller	5-43	
H014 2111	Belt - Feed Out Roller	5- 49	
H014 2112	Bracket - RX Motor	5- 28	
H014 2118	Bracket - Terminal Head Ass'y	7- 78	
H014 2120	Bracket - Right - Thermal Head	7-83	
H014 2121	Bracket - Left - Thermal Head	7- 79	
H014 2122	Shaft - Terminal Head	7- 81	
H014 2125	Pressure Roller - Printer	7- 75	
H014 2128	Bracket - Right - Pressure Roller	7-74	
H014 2129	Bracket - Left - Pressure Roller	7- 82	
H014 2131	Bushing - M4	7- 73	
H014 2132	Antistatic Brush - Printer	7- 71	
H014 2136	Guide Plate - Lower - Feed Out	5-42	
H014 2137	Guide Plate - Lower - Platen Roller	5- 39	
H014 2140	Fixing Plate - Speaker	5- 61	

Parts No.	Description	Page and Index No.	Same as K52/53
H014 2143	Bracket - Door Switch	5- 33	
H014 2150	Guide Plate - Upper - Feed Out	5- 41	
H014 2157	Fixing Plate - SB6	5-48	
H014 2158	Base Ass'y	5- 53	
H014 2159	Timing Belt - 83T	5- 26	
H014 2160	Timing Belt - 97T	5- 30	
H014 2161	Insulating Sheet	5- 54	
H014 2163	Harness Holder - Cutter	5- 25	
H014 2164	Harness Holder - Motor	5-22	
H014 2171	Sheet - Paper Holder	5- 17	
H014 2173	Stepped Screw - M3 x 5.7	7-107	
H014 2175	Spring - Terminal Head	7- 77	
H014 2176	Ground Plate -Guide Plate	5-57	
H014 2177	Spacer - B4 - PSU	5- 11	
H014 2178	Harness Guide Cover	5-55	
H014 2180	Black Sheet - 20 x 20mm	7-108	
H014 2185	Stopper - Thermal Head	5-64	
H014 2187	Shaft - Paper Stopper	5-20	
H014 3106	Shaft - Locking Lever	7- 5	
H014 3107	Bushing - Locking Lever	7- 3	
H014 3108	Locking Lever - Right	7- 4	
H014 3109	Locking Lever - Left	7- 7	
H014 3110	Release Button - Locking Lever	7- 8	
H014 3121	Inner Cover - Top Cover	3- 22	
H0143122	Bracket - Upper Unit	7- 2	
H014 3123	Spring - Lock Lever - Left	7- 6	
H014 3127	Arm - Inner Lock	7- 11	
H014 3128	Inner Cover - Left	5- 56	
H014 3129	Inner Cover - Right	5-23	
H014 3131	Heat Shield Sheet	5- 66	
H014 3132	Guide Arm - Inner Lock	7-111	
H014 4207	Original Tray	3- 30	
H014 4213	Addresses Sheet	3-26	
H014 4214	Seal - Address Sheet	3- 27	
H014 5000	Rx Motor Ass'y - A3/B3	5-29	

Parts No.	Description	Page and Index No.	Same as K52/53
H014 5001	Tx Motor Ass'y - A3/B3	7- 30	
H014 5005	Harness - FCU/OPU - A3/B4	3- 29	
H014 5005	Harness - FCU/OPU - A3/B4	5- 12	
H014 5008	Harness - VPU/SBU - A3/B4	7- 50	
H014 5011	Harness - Handset/FCU	5- 59	
H014 5012	Monitor - Speaker	5- 60	
H014 5015	Paper Width Sensor - SB6	5- 47	
H014 5022	Document Sensor - SB2	7- 87	
H014 5023	Harness - FCU/VPU/HEAD/PSU	7- 49	
H014 5024	Ground Wire Ass'y	5- 16	*
H014 5024	Ground Wire Ass'y	5- 24	*
H014 5024	Ground Wire Ass'y	7- 21	*
H014 5024	Ground Wire Ass'y	7-89	*
H014 5026	Ground Wire - Scanner	5- 58	
H014 5026	Ground Wire - Scanner	7- 51	
H014 5301	Thermal Head - K55	7- 80	
H014 5403	PSU - 220V, A3	5- 68	
H015 1100	Base - Scanner	7- 63	
H015 1101	Second Mirror	7- 58	
H015 1104	Mirror Holder 2 - Left	7- 57	
H015 1105	Mirror Holder 2 - Right	7- 62	
H015 1600	Inner Cover - SBU	7- 1	
H015 2100	Base - K55	5-62	
H015 2165	Ground Plate - Guide Plate	5- 50	
H015 2166	Ground Plate - Platen Roller	5- 35	
H014 2167	Ground Plate - Feed Out	7-110	
H015 3103	Document Guide - Right	3- 15	
H015 3104	Document Guide - Left	3- 16	
H015 3105	Top Cover	3- 17	
H015 3107	Sub Document Table	3- 2	
H015 3110	Front Cover	3- 13	
H015 3619	Addresses Sheet Cover	3- 25	
H015 3621	Rear Cover	3- 4	
H015 4653	Basic Operation Manual - FAX60	3- *	
H015 4655	Basic Operation Manual - FAX60	3- *	

Parts No.	Description	Page and Index No.	Same as K52/53
H015 4657	Basic Operation Manual - FAX60	3- *	
H015 4660	Operator Manual - FAX60	3- *	
H015 4661	Operator Manual - FAX60	3- *	
H015 4662	Operator Manual - FAX60	3- *	
H015 4683	Op-Port Cover	3-24	
H015 4684	Op-Port Cover	3- 24	
H015 4685	Op-Port Cover	3- 24	
H015 4800	Decal - Power Switch	3- 3	*
H015 4809	Decal - A4 Roll Holder	3- 6	
H015 4810	Decal - A4 Roll Holder	3- 6	
H015 2811	Decal - A4 Roll Holder	3- 6	
H015 4812	Decal - Paper Replacement	3- 5	
H015 4813	Decal - Paper Replacement	3- 5	
H015 4814	Decal - Paper Replacement	3- 5	
H015 4815	Decal - Paper Jam	5-38	
H015 4816	Decal - Paper Jam	5- 38	
H015 5018	Led Ass'y - A3	7-27	
H015 5019	Document Sensor - SB1, 3	7-102	
H015 4818	Decal - Paper Guide	5-37	
H015 4819	Decal - Paper Guide	5- 37	
H015 1820	Decal - Paper Guide	5- 37	
H015 4827	Decal - Paper Jam	5- 38	
H015 6002	PCB -VPU-A3	7- 55	
H015 6003	PCB - SBU	7- 52	
H015 6010	PCB - Op-Port	3- 28	
H015 6023	PCB - MBU - K55	5- 6	
H015 6024	PCB - MBU - K55	5- 6	
H015 6025	PCB - MBU - K55	5- 6	
H015 2101	Cutter Ass'y - B4	5- 36	

Parts No.	Description	Page and Index No.	Same as K52/53
5053 0223	Bushing – 8mm	7– 44	
5053 0447	Bushing – M6	5– 44″	*
5053 0447	Bushing – M6	7– 20	*
5466 3198	Washer – SBU	7– 54	*
5474 1307	Gear – ADF Tray	7– 19	
5474 1307	Gear – ADF Tray	3– 19	
5474 2152	Bushing – Platen Roller	5– 32	*
5474 3244	Rubber Foot	5– 52	*
5474 6024	PCB ASS'y – V96F Modem	5– 8	*
5475 2013	Plate Spring – Pinion	7– 18	
5475 2013	Plate Spring – Pinion	3– 18	
5475 2047	Sheet – Rack Cover	3– 23	

Parts No.	Inscription	Page and Index No.	Same as K52/53
0312 0080B		5–106	
0313 0060B	Philips Pan Head Screw – M3 x 6	5–107	
0313 0060B	Philips Pan Head Screw – M3 x 6	7–211	
0313 0080B	Philips Pan Head Screw – M3 x 8	7–202	
0323 0060B	Philips Sunk Screw – M3 x 6	3–101	
0573 0040E	Hexagon Headless Set Screw – M3 x 4	7–200	
0632 0080	Parallel Pin – M2 x 8	7–205	
0632 0120G	Parallel Pin – M2 x 12	7–210	
0705 0030C	Toothed Washer – M3	7–207	
0720 0025E	Retaining Ring – M2.5	7–204	
0720 0030E	Retaining Ring – M3	5–109	
0720 0030E	Retaining Ring – M3	7–213	
0720 0040E	Retaining Ring – M4	5–105	
0720 0040E	Retaining Ring – M4	7–206	
0720 0060E	Retaining Ring – M6	5–103	
0720 0060E	Retaining Ring – M6	7–214	
0801 1176	Phllips Screw – M3 x 10	7–208	
0950 3008B	Sems Screw – M3 x 8	7–201	
0951 3005B	Philips Screw with Flat Washer – M3 x 5	3–105	
0951 3005B	Philips Screw with Flat Washer – M3 x 5	7–203	
0951 3005B	Philips Screw with Flat Washer – M3 x 5	5–101	
0951 3008B	Philips Screw with Flat Washer – M3 x 8	3–100	
0951 3010B	Philips Screw with Flat Washer – M3 x 10	3–104	
0965 3005B	Tapping Screw with Flat Washer – M3 x 5	3–102	
0965 3006B	Tapping Screw with Flat Washer – M3 x 6	3–103	
1105 0076	TY – Wrap	7–211	
1105 0076	TY – Wrap	7–215	
1105 0109	Cord Keep	3– 12	
1105 0109	Cord Keep	7–212	

APPENDIX A. BIT SWITCHES

[BIT SW 0]

BIT No.	Function	Remarks
0	Back to Back function 1 ; Enabled When this bit is set to "1", the Start key is enabled without hanging up the handset.	To directly connect two machines and check the communication function
1	Memory Read/Write acceptable 1 ; Not acceptable When this bit is set to "1", a memory Read/Write request is not accepted.	This bit should be "0" when RAM data is to be changed from the service center by a K10 series machine.
2 3 4 5 6	Not used.	

BIT No.	Function	Remarks
7	Communication parameter display 1 ; Display enabled When connected in Gill mode, the communication parameters are displayed during communication. Data are displayed as shown below.	To confirm the communication parameters. Note that the size in the third column refers to the transmitted size (after reduction).

96,	2D,	AN,	DCS,	10M,	38
Modem rate	Coding	Size and reduction	Mode	I/O rate	Resolution
96:9600 bps	1D: MH	A: A4 size	DCS:CCITT	10M	3.8:3.85 line/mm
72:7200 bps	2D: MR	N: No reduction	standard mode	20M	7.7: 7.7 line/mm
48:4800 bps	1E: EFC and MH	B: B4 size	NSS: Non-standard	40M	
		R: Reduction	mode (RICOH)		

[BIT SW 1]

BIT No.	Function	Remarks
0	FAX/TEL selection 0; FAX 1; Tel This bit can be changed by Function 51 (K53/55/57) or Tel mode key (K52). When this bit is set to "1", automatic receiving is not available.	
1	Resolution selection at power-up 0 ; Standard 1 ; Detail	Set as the customer desires.
2	Home position set for resolution 1 ; As specified in bit 1 When communication is finished, the resolution returns to that selected by bit No. 1 if this bit is "1".	
3 4	Original contrast selection at power-up 0 0 Normal 1 0 Dark 0 1 Light 1 1 Halftone (K52:Light) The original contrast selected by these bits is selected also when transmission is completed.	

BIT No.	Function	Remarks
5	Setting of keypad standby default mode 0;One-touch 1 ; Keypad When communication is finished, the keypad mode is selected if this bit is 1.	
6	Home position set for contrast 0 ; Contrast does not reset after the end of transmission. 1 ; As specified in bits 3 and 4.	
7	Not used.	

[BIT SW 2]

BIT No.	Function	Remarks
0 1	Selection of transmission modem rate 0 0 } 9600 bps 1 0 } 7200 bps 0 1 } 4800 bps 1 1 } 2400 bps	Select to meet the line condition.
2 3	**I/O rate in standard mode for transmission** 0 0 } 10 ms 1 0 } 20 ms 0 1 1 1 } 40 ms	**If bit 4 is 0 and bits 2 and 3 are also 0, the I/O rate in detail mode is 10ms.**
4	**I/O rate in detail mode for transmission** **0 ; Two times as fast as the standard mode** **1 ; The same speed as the standard mode**	
5	**Selection of EFC Function in transmit mode** **0 ; EFC priority**	
6	**Selection of Coding 0 ; MR priority 1 ; MH**	
7	**Recognition of remote terminal's paper length** **0 ; No limit is recognized** **1 ; Limit is recognized. MPS is sent after receiving the length specified by the remote terminal.** **The remote terminal may designate a fixed paper length such as A4 or B4.**	

[BIT SW 3]

BIT No.	Function	Remarks
0 1 2 3	**Transmission level from modem** **0: – 1 d B 1 : 0 d B** **0: – 2 d B 1 : 0 d B** **0: – 4 d B 1 : 0 d B** **0: – 8 d B 1 : 0 d B**	**To change the transmission level** **The Tx level is the sum of these 4 bits.** **Controls the attenuator in the MIF.** **30/6 can be adjusted by NCU potentiometer.**
4 5	**Protection against wrong connections** 0 0 No protection 0 1 When CSI number from the remote terminal is different from the telephone number entered, transmission is stopped. 1 1 0 1 When CSI or RTI is not sent from the remote terminal, transmission is stopped.	**Set it when the customer desires.**
6 7	Handshake modem rate for protocol when transmitting 0 0 300 bps 1 0 1 0 1 1 Not used	

[BIT SW 4]

BIT No.	Function	Remarks
0	**Hang-up decision when a negative code (RTN or PIN) is received.** **0 ; No hang-up 1 ; Hang-up**	
1	**Echo countermeasure** **0 ; Enabled** **When the same code that was sent is received, it is ignored.**	**If this is set to 1, the K50 will disconnect instead of ignoring echoes.**
2	**CNG signal transmission in manual transmission mode** **0 ; Enabled** **For automatic dialing, this bit should be 0.**	
3	**DIS detection times** **(Echo countermeasure for transmission)** **0 ; Once 1 ; Twice**	**If this is set to 1, the K50 will wait for a second DIS before returning DCS.**
4 5	Page retransmission times 0 0 None; 1 0 Once (for K57); 0 1 Twice (for K57); 1 1 Three times (for K57)	

BIT No.	Function	Remarks
6	**Printing condition of TCR** 0: Results of communications which were disconnected before transmission/reception of image data are not printed. 1: All communications are listed except for telephone calls with On Hook Dial.	
7	**Selecting of NCU types** **0: PROGRAMMABLE** **1: PERMISSIVE**	**0 – U.S.A. only** **Others must be set at "1".**

[BIT SW 5]

BIT No.	Function	Remarks
0	Display priority between NSF (CSI) and CSI 0; NSF (CSI) priority 1 ; CSI When both NSF (CSI) and CSI frames are received, the frame with priority is displayed.	
1	NSF (CSI) and CSI frame display decision 0; Displays the frame with priority 1 ; Displays both frames	
2	NSF (CSI) and/or CSI frame display decision O; Displayed When this bit is "1", bits 0 and 1 are ignored.	
3	NSF frame reception 0; Enabled	
4	Transmission of the TSI frame before the DCS code 0; Enabled	
5	Transmission of the NSS (TSI) frame after NSS(S) code 0; Enabled	
6	GI (Group Identification) signal reception in G2 mode 0; Enabled	
7	Polling (only K52) 1 ; Free 0 ; Secured	

[BIT SW 6]

BIT No.	Function	Remarks
0	Confidential transmission 0; Enabled 1 ; Disabled	FTZ specification
1	Transfer request 0; Enabled 1 ; Disabled	FTZ specification
2	End of page signal after 8 minutes 0; Disabled 1 ; Transmitter sends an end-of-page signal if the page takes longer than 8 minutes to transmit. The receiver outputs the rest of the page on a separate sheet.	FTZ specification
3	Not used.	
4	Resolution in A3-to-A4 reduction mode during G3 transmission 0; Detail 1 ; Resolution which is selected	

BIT No.	Function	Remarks
5	Reduction in transmission (K55/57) O; Enabled Document width / Paper width at the remote termial / Reduction A3 / B4 / Reduced to B4 A3 / A4 / Reduced to A4 B4 / A4 / Reduced to A4 1 ; Disabled The width of transmitted data will match the paper width which is set in the remote terminal; left and right edges will be lost. Note: When this bit is set to "1", bit No. 4 is ignored.	
6	G1 selection 1 ; Disabled	U.S.A. only
7	Conditions for going into transmit mode 0; After detecting polarity change and CED 1 ; Goes into Tx mode without CED or polarity detection	

[BIT SW 7]

BIT No.	Function	Remarks
0	Line error counter method 0; Selects bit no. 1 method 1 ; Selects bit no. 2/3 and bit no. 4/5/6 method	
1	Line error counter method 0; Selects bit no. 1 method 1 ; Selects bit no. 2/3 and bit no. 4/5/6 method 1 ; Disabled * When a line error occurs, the error counter increases by + 1. When the counter reaches 10, RTN is sent.	
2 3	New FTZ Quality Criterion – Threshold value for line error. 0 0 → 3 (6) lines 1 0 → 4 (8) lines 0 1 → 5 (10) lines 1 1 → 6(12) lines	Values for detailed resolution are in parenthesis. In the new FTZ quality check, the error line counter will be decremented by one every time an error-free line is received.
4 5 6	New FTZ Quality Criterion – Error Line Ratio (Error Lines/Total Line * 100) 0 0 0 → 5% 1 0 0 → 6% 0 1 0 → 7% 1 1 0 → 8% 0 0 1 → 9% 1 0 1 → 10%	
7	Not used.	

[BIT SW 8]

BIT No.	Function	Remarks
0	**Longest receivable document** **0 ; Unlimited** **1 ; A4 length**	**Set this to 1 when the user requires all received copies to be cut into A4 lengths.**
1	**EFC function in receive mode** **0 ; Enabled**	
2	**Coding method to be notified to the transmitting terminal** **0 ; MH and MR** **1 ; MH only**	
3 4	**Modem types to be notified to the transmitting terminal** 0, 0 } V29 0, 0 } V27 ter 1, 0 } V27 ter 0, 1 V27 ter 1, 1 fall back	
5	**Receiver training error counter method** **0 ; For USA, Asia, etc.** **1 ; For Europe only**	
6 7	**Receiver training error tolerance** **USA, Asia, etc.** 0, 0 } 15 bits 1, 0 } 10 bits 0, 1 } 2 bits 1, 1 } 0 bits For **Europe only** 0, 0 } 14 bits 1, 0 } 9 bits 0, 1 } 4 bits 1, 1 } 1 bits	

[BIT SW 9]

BIT No.	Function	Remarks
0	Resolution to be notified to the transmitting terminal 0 ; 3.85 (Standard) and 7.7 (Detail) 1 ; 3.85 only	
1 2	Handshake modem rate for protocol when receiving 0, 0 } 300 bps 1, 0, 1 / 0, 1, 1 } Not used.	
3 4	Modem rate for the start of reception 0, 0 } 9600 bps 1, 0 } 7200 bps 0, 1 } 4800 bps 1, 1 } 2400 bps	
5 6	I/O rate in standard mode for reception 0, 0 } 10 ms 1, 0 } 20 ms 0, 1 / 1, 1 } 40 ms	
7	I/O rate in detail mode for reception 0 ; Two times as fast as the standard mode 1 ; The same speed as the standard mode	If bit 7 is 0 and bits 5 and 6 are also 0, the I/O rate in detail mode is 10ms.

[BIT SW A]

BIT No.	Function	Remarks
0	Transmission of NSF(S) frame 0 ; Enabled	
1	Transmission of NSF(CSI) frame 0 ; Enabled	
2	Transmission of CSI frame 0 ; Enabled	
3	Transmission of Group Identification signal 0 ; Enabled	
4	Substitute reception 1 ; Disabled	K57 only
5	Confidential reception 1 ; Disabled	K57 only
6	Condition for SAF reception 1 ; SAF can receive only when a TSI or NSS (TSI) frame is received from the remote terminal. 0 ; SAF can receive even when a TSI or NSS (TSI) frame is not detected.	
7	Not used.	

[BIT SW B]

BIT No.	Function	Remarks
0	Confidential transmission or reception with personal ID 1 ; Disabled	Only possible with K83, K61 and K57
1	Communication mode at power up 0 ; AUTO 1 ;G2	
2	Compatibility with MV 1200 1 ; Enabled	
3	FTZ Specifications 1 ; Enabled	For Europe.
4	Voice Identification 1 ; Disabled	U.S.A. only
5 6 7	Handset speaker volume during routine operation 0; 0 dB 1; + 3 dB 0; 0 dB 1; + 6 dB 0; 0 dB 1; +12 dB	U.S.A. only

[BIT SW C]

BIT NO.	Function	Remarks
0	Monitor speaker during transmission 1 ; Disabled at all times during transmission	
1 2 3	Monitor speaker volume during transmission 0; 0 dB 1; + 3 dB 0; 0 dB 1; + 6 dB 0; 0 dB 1; +12 dB	Changed by mode 56.
4	Monitor speaker during reception 1 ; Disabled at all times during reception	
5 6 7	Monitor speaker volume during reception 0; 0 dB 1; + 3 dB 0; 0 dB 1; + 6 dB 0; 0 dB 1; +12 dB	Changed by mode 56.

[BIT SW D]

BIT No.	Function	Remarks
0	Transmission report output 0 ; Enabled	
1	Error report output 0 ; Enabled	
2	Automatic TCR output 0 ; Output automatically every 35 communications 1 ; Not output automatically	
3	TCR memory cleared after output 1 ; TCR memory cleared TCR memory is cleared after a manual TCR (Function 70] is performed.	
4	TSI printing 0 ; Enabled When this bit is set at 0, the TSI or NSS (TSI) sent from the transmitter is printed at the head of the output data.	If this is enabled and if bit 3 of bit switch F is 1, the TSI will be printed on top of the RTI.

BIT No.	Function	Remarks
5	Clearing of the transmission confirmation report memory 1 ; Clear When the stop button or function button is pressed, or when the timer is exceeded after this bit is set at 1, TCR, Service Report, Error Report and error codes are all cleared. After erasing, the bit is automatically set back to 0.	
6	Clearing of the transmit and receive counters/scanned and plotted document counters 1 ; Clear When the stop button or function button is pressed, or when the timer is exceeded after this bit is set at 1, the counters are cleared. When they are cleared, this bit is automatically set back to 0.	
7	RAM clear and reset After this bit is set to 1, the CPU resets the K50 to all default settings.	

[BIT SW E]

BIT No.	Function	Remarks
o 1	Maximum transmittable document length 0 / 0 } 600 mm 1 / 0 } 1.2 m 0, 1 / 1, 1 } 14 m	
2	Minimum printout length 0; 75 mm 1 ; 150 mm (A5 length)	
3	Printer paper width 0 ; Read from sensor 1 ; Taken as A width; informs A width in protocol	
4	Thermal Head Size 0 ; B4 size 1 ; A4 size	Changed by mode 97.
5	Not used	
6	Stamper (Asian K55/7 models only) O; Enabled	
7	Monitor speaker status during video data communication o; 0ff 1 ; On	

[BIT SW F]

BIT No.	Function	Remarks
0	TTI date output 0 ; Transmitted as document data 1 ; Not transmitted	
1	TTI character output 0 ; Transmitted 1 ; Not transmitted	
2	TTI page number output 0 ; Transmitted 1 ; Not transmitted	
3	TTI printing start position This is the distance of the time/date information in from the scan start position. 0 ; 24 mm 1 ; 48 mm	
4	TTI printing during copying 0 ; Prohibited 1 ; Printed	
5 6	Buzzer volume during operator call for Voice Request 0 0 } Loud 1 0 } Weak 0 1 } Medium 1 1 } OFF	
7	Pause key input indication on display panel 1; "–" 0; "P"	

[BIT SW 10]

BIT No.	Function	Remarks
0	Page count prompt 0 ; Displayed 1 ; Not displayed	Changed by mode 54.
1	Department code prompt 0 ; Displayed 1 ; Not displayed	Changed by mode 55.
2	Not used.	
3	EFC prompt 0 ; Displayed	FTZ specification
4	Reduction prompt 0 ; Displayed	FTZ specification. Can be used by ROA to enable reduction override.
5	Resolution prompt 0 ; Displayed	FTZ specification
6 7	Not used.	

[BIT SW 11]

BIT No.	Function	Remarks
0 1 2 3 4	**Country code of the local terminal** BIT NO. 4 3 2 1 0 Germany 0 0 0 0 1 England 0 0 0 1 0 Italy 0 0 0 1 1 Austria 0 0 1 0 0 Belgium 0 0 1 0 1 Denmark 0 0 1 1 0 Finland 0 0 1 1 1 Ireland 0 1 0 0 0 Norway 0 1 0 0 1 Sweden 0 1 0 1 0 Switzerland 0 1 0 1 1 Portugal 0 1 1 0 0 Netherlands 0 1 1 0 1 U.S.A 1 0 0 0 1 Asia 1 0 0 1 0 Japan 1 0 0 1 1	For enabling the required set of PTT parameters.
5	Not used (Japan only)	
6 7	**Dialing method from PABX to PSTN** BIT NO. 7 6 PSTN 0 0 PABX Loop Start 0 1 PABX Ground Start 1 0 PABX Flash Start 1 1	Set PABX access number by Bit Sw 13.

[BIT SW 12]

BIT No.	Function	Remarks
0 1	Dialing method in pulse dial mode BIT NO. 1 0 P = N 0 0 Normal P = 10 − N 0 1 Oslo P = N + 1 1 0 Sweden P: Number of pulses N: Dialed No.	Note that in normal mode, 0 is 10 pulses.
2	Dial tone detection (PSTN) 0 ; Enabled	Europe only
3	Busy tone detection 0 ; Enabled	Europe only
4	Line current detection 0 ; Enabled	Europe only
5	Dial tone detection (PABX) 0 ; Enabled	Europe only
6	Redial when T1 timer exceeded 0 ; Enabled 1 ; Disabled (for Austria and Norway)	
7	Dialing method 0 ; DTMF 1;PD	Changed by mode 81.

[BIT SW 13]

BIT No.	Function	Remarks
0	Access Number Registration for connection to PSTN.	
1		
2		
3	Access No. Hex value of BITSW 13 0 → F0 ↓ ↓ 9 → F9	Example: Code 0 Set bits 0 → 3 to 0 and bits 4 → 7 to 1.
4		
5	00 → 00 ↓ ↓	
6	99 → 99	
7	If the machine detects this access code at the start of a telephone number, it will wait until PSTN dial tone is detected before continuing. This function is only enabled when bit switch 11, bits 6 and 7 select Loop Start.	

[BIT SW 14]

BIT No.	Function	Remarks
0	ADF or Cutter Test Mode 1 ; Enabled When the document is set, press the Copy button to feed the document. When the document is not set, press the Copy button to make a paper cycle.	
1	DTMF Detection Method for FAX/TEL change from the external telephone. (USA only) 0 ; Tone must be longer than 70ms 1 ; Tone must be longer than 1000ms in standby mode (more than 200ms during fax communication)	
2 3 4 5	Not used	
6	FAX/TEL change from external telephone 0 ; Enabled	For U.S.A only
7	Dial pulse rate 0 ; 20 pps 1 ; 10pps	

[BIT SW 15]

BIT No.	Function	Remarks
0 1	Machine type 0 0 K52, K53 1 1 K55, K57	Selects the appropriate stepper motor and printer control.
2	Not used.	
3	Halftone dither method 0 ; 64 levels 1 ; 16 levels	
4	Smoothing 1 ; Enabled	
5	Near End display (blinking Replace Roll indicator) 0 ; Enabled	* The Near End counter will be reset when SB10 turns OFF/ON after the Replace Roll indicator lights.
6	When the copy count is more than 30 in copy mode 0 ; Copy is disabled. 1 ; Machine stops for 40 sec. per 1 sheet.	
7	Result report 0 ; Printout 1 ; Not printout	

[BIT SW 16]

BIT No.	Function	Remarks
o	Monitor speaker in dialing mode 0; Enabled	
1 2 3	Monitor speaker volume in dialing mode 0 ; 0 d B 1 ; + 3 d B 0 ; 0 d B 1 ; + 6 d B 0 ; 0 d B 1 ; + 12 d B	Changed by mode 56.
4	Not used,	
5 6	Buzzer volume for ringing signals 0 0 Loud 1 0 Medium 0 1 Weak 1 1 Off	
7	On-hook dial 0 ; Enabled	

[BIT SW 17]

BIT No.	Function	Remarks
0 1 2	Handset speaker volume when playing back Voice ID 0 ; 0 d B 1 ; + 3 d B 0 ; 0 d B 1 ; + 6 d B 0 ; 0 d B 1 ; + 1 2 d B	U.S.A. only
3 4 5	Monitor speaker volume when playing back Voice ID 0 ; 0 d B 1 ; + 3 d B 0 ; 0 d B 1 ; + 6 d B 0 ; 0 d B 1 ; + 1 2 d B	U.S.A. only
6 7	Not used.	

APPENDIX B. TEST POINTS, JUMPERS AND VRS

1 .FPD

TP1 – Ground for + 24V supply

2. SBU

TP1 – XVIDEO

VR1 – White level voltage adjustment

3. MBU

SW1 – Battery switch

JP1,2 – ROM addressing

	K52/3/5	K57
JP1	Open	Shorted
JP2	Shorted	Open

4. KALLE NCU

VR1 – Tx level (range about 3 dB)

JP1 → 8, 11 – Enable various PTT requirements. Do not adjust in the field.

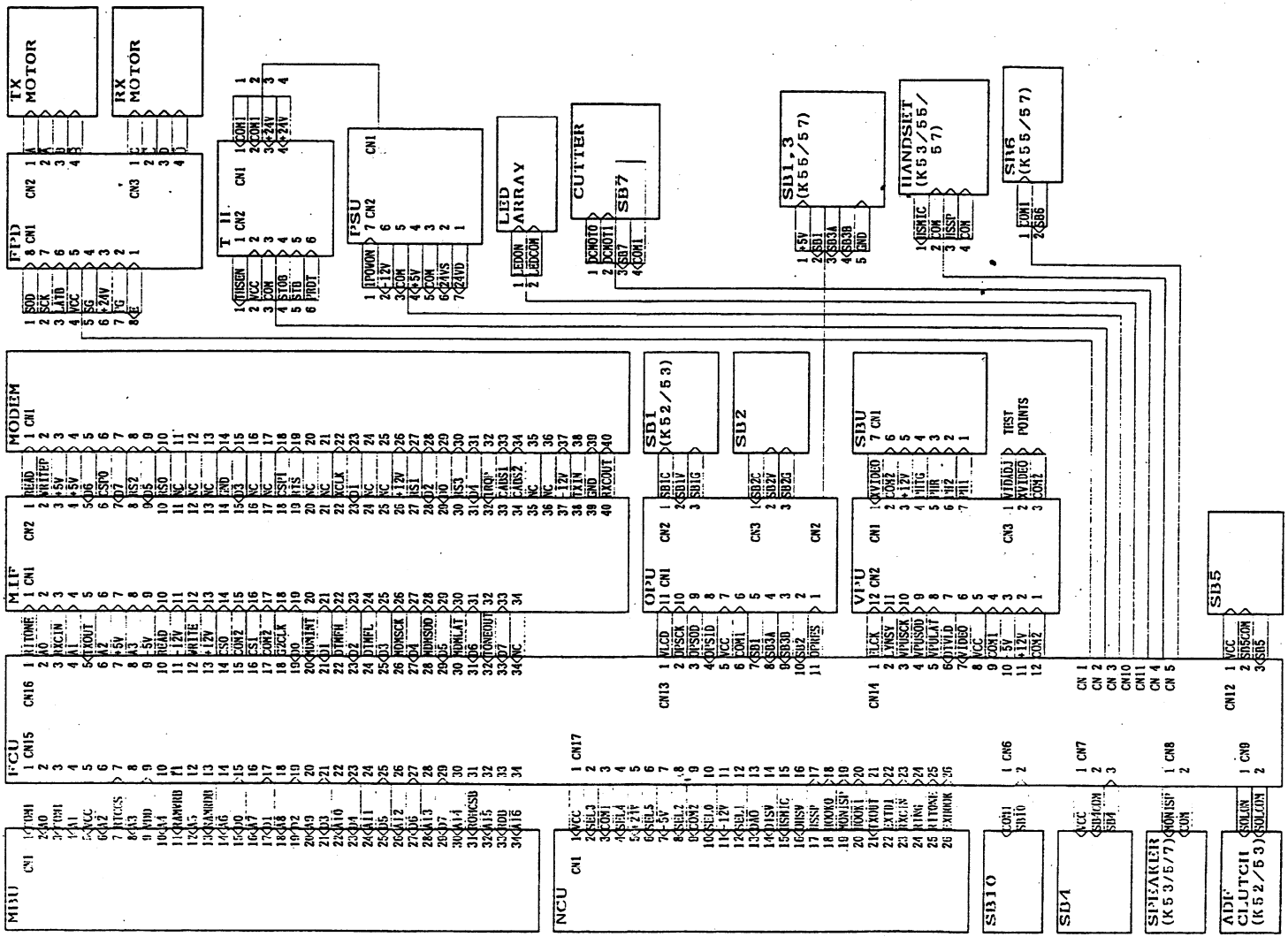
JP9, 10 – PSTN access

	Ground start	Loop start
JP9	S	O
JP10	O	S

JP12 – If open, service mode is disabled

JP13 – Not used

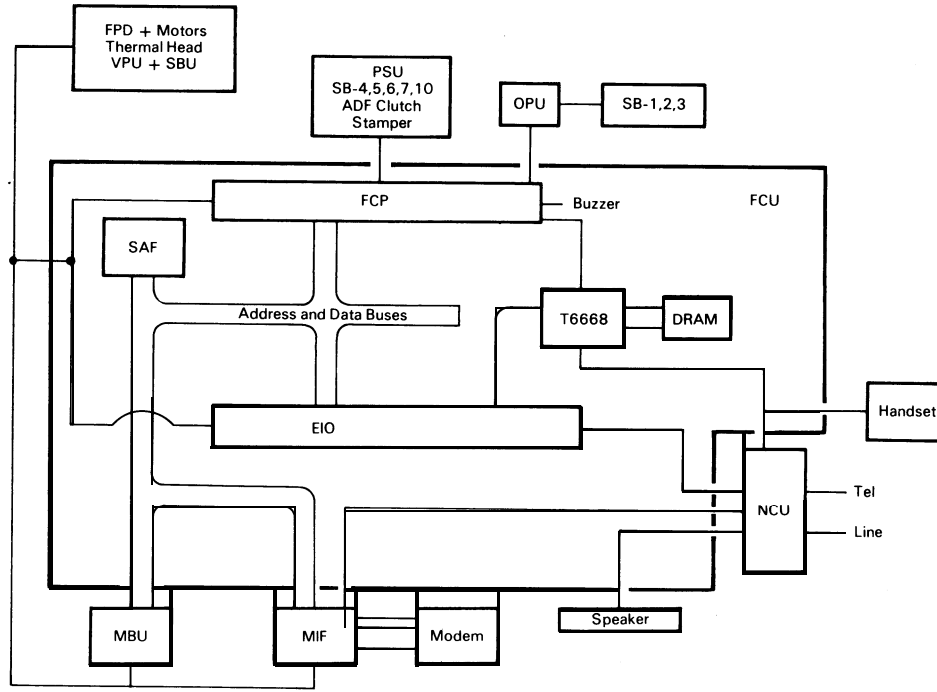
APPENDIX C. POINT TO POINT DIAGRAM

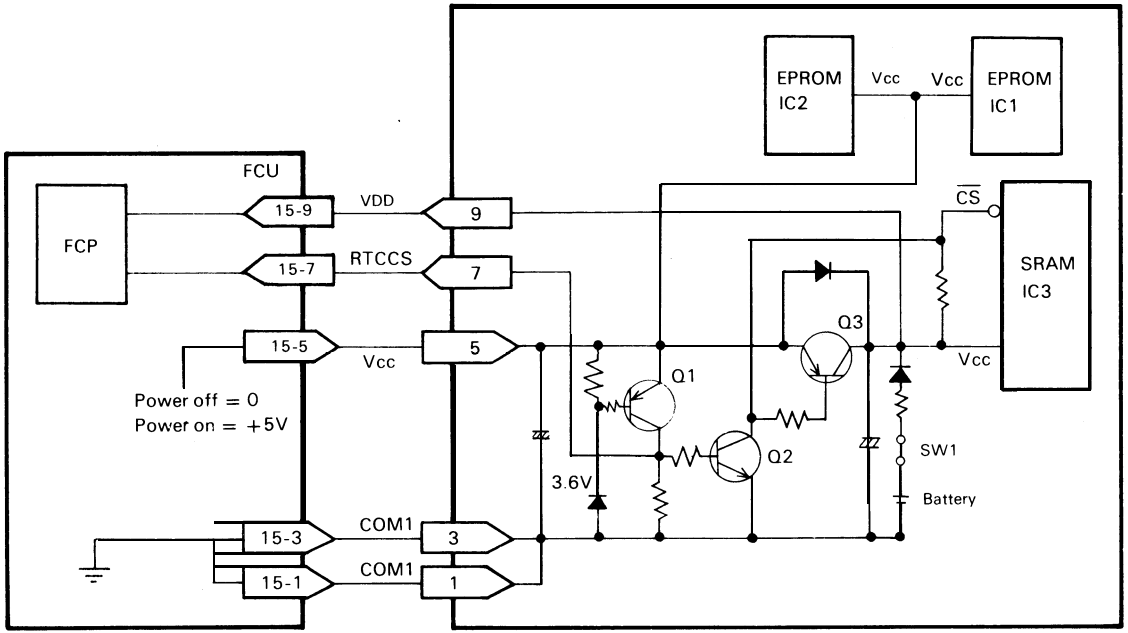


APPENDIX D. BLOCK DIAGRAMS

1. System Control

– Overview –

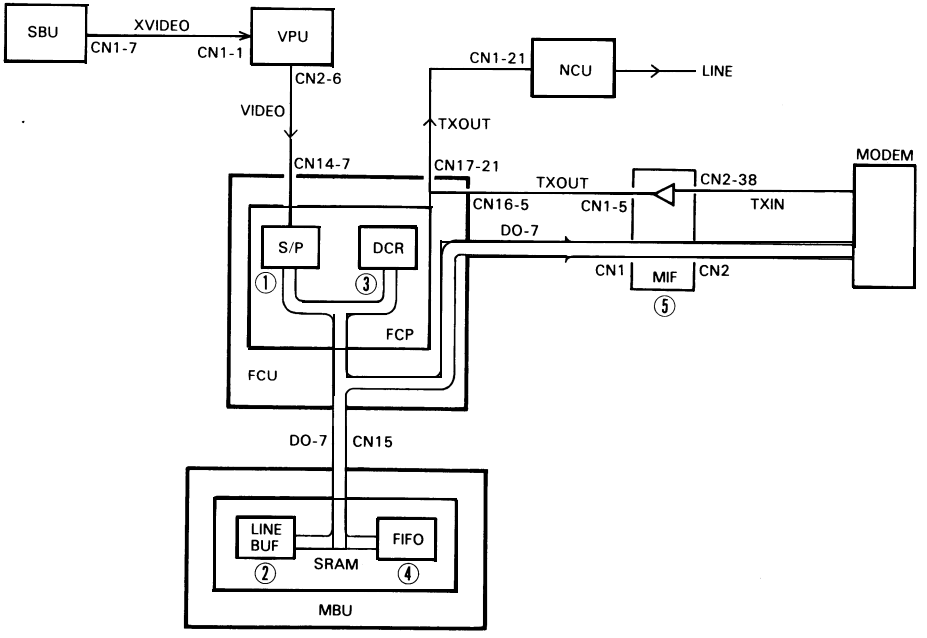




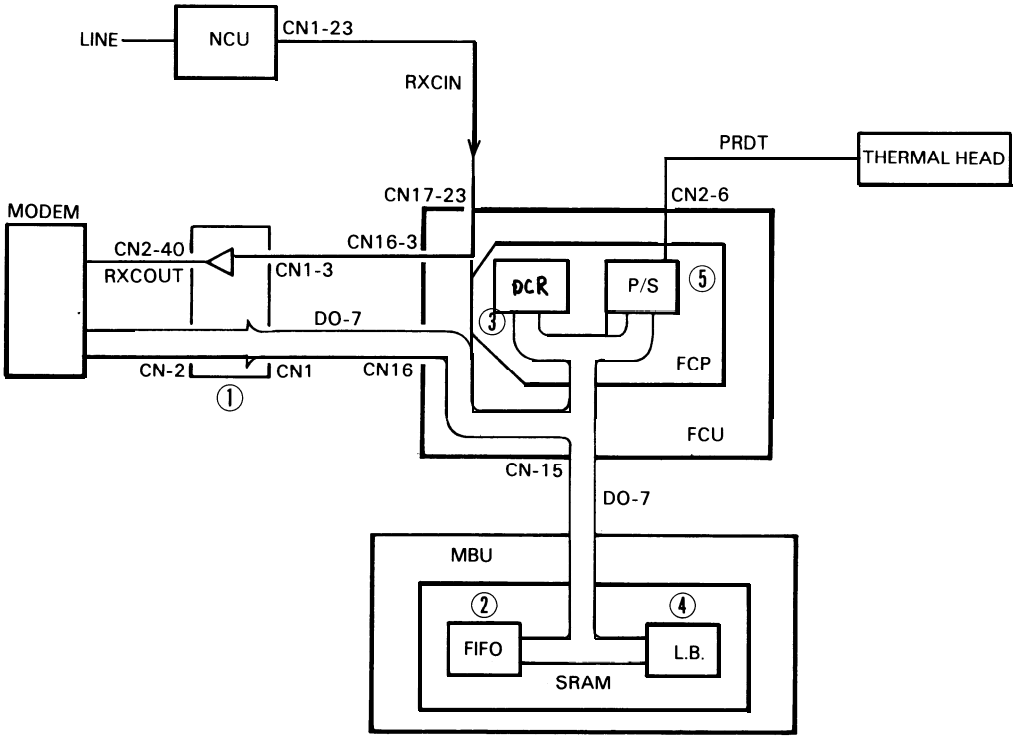
Note: 15-9 = CN15, pin9

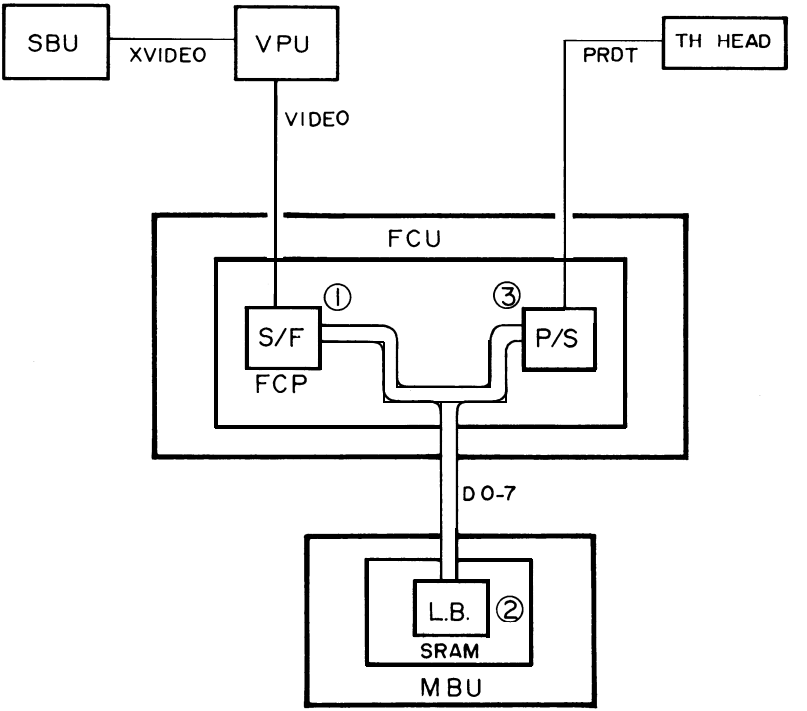
2. Video Data Flow

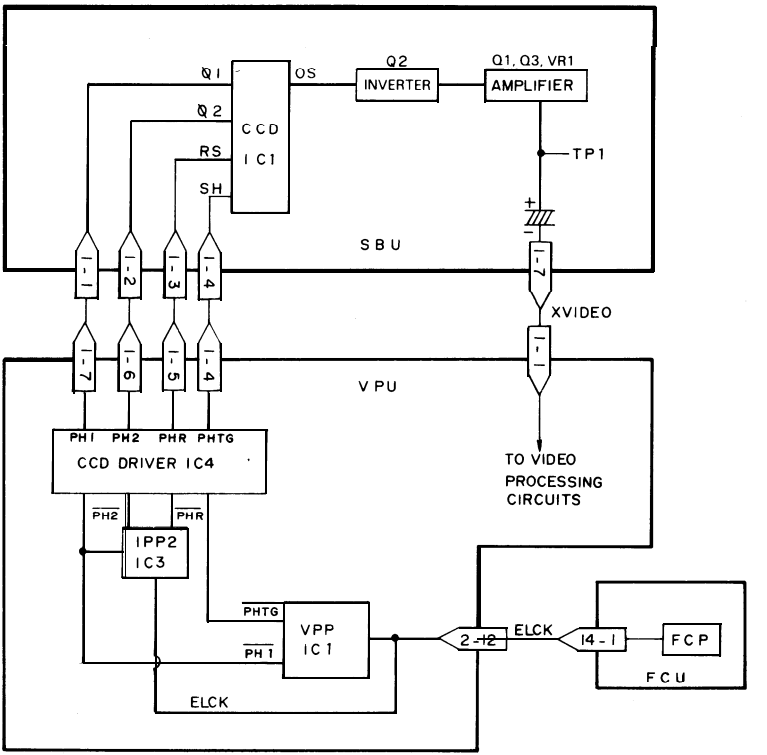
– Transmission –



– Reception –


LINE
NCU
CN1-23
RXCIN
PRDT
THERMAL HEAD
CN17-23
CN2-6
MODEM
CN2-40
CN16-3
RXCOUT
CN1-3
DCR
P/S
5
3
DO-7
FCP
CN-2
CN1
CN16
1
FCU
CN-15
DO-7
MBU
2
4
FIFO
L.B.
SRAM

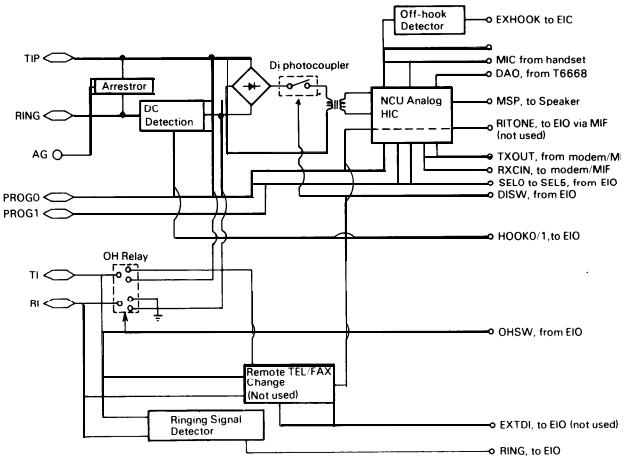

SBU
XVIDEO
VPU
VIDEO
PRDT
TH HEAD
FCU
①
③
S/F
P/S
FCP
D0-7
L.B.
②
SRAM
MBU

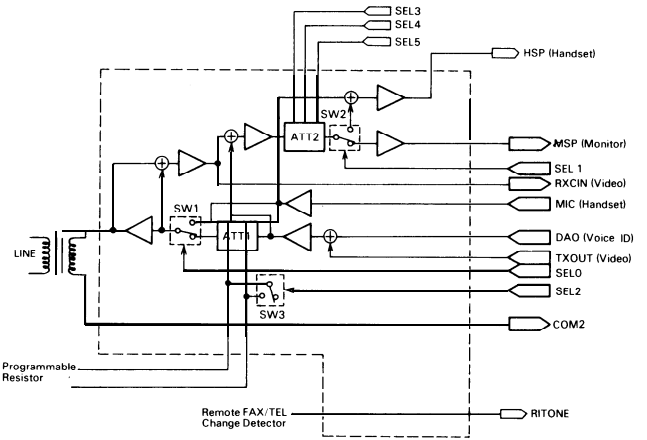

Q1
Q2
RS
SH
CCD
IC1
OS
Q2
INVERTER
Q1, Q3, VR1
AMPLIFIER
TP1
SBU
XVIDEO
VPU
PH1 PH2 PHR PHTG
CCD DRIVER IC4
TO VIDEO
PROCESSING
CIRCUITS
PH2
PHR
IPP2
IC3
PHTG
PH1
VPP
IC1
ELCK
2-12
ELCK
14-1
FCP
FCU

3. Communication Control

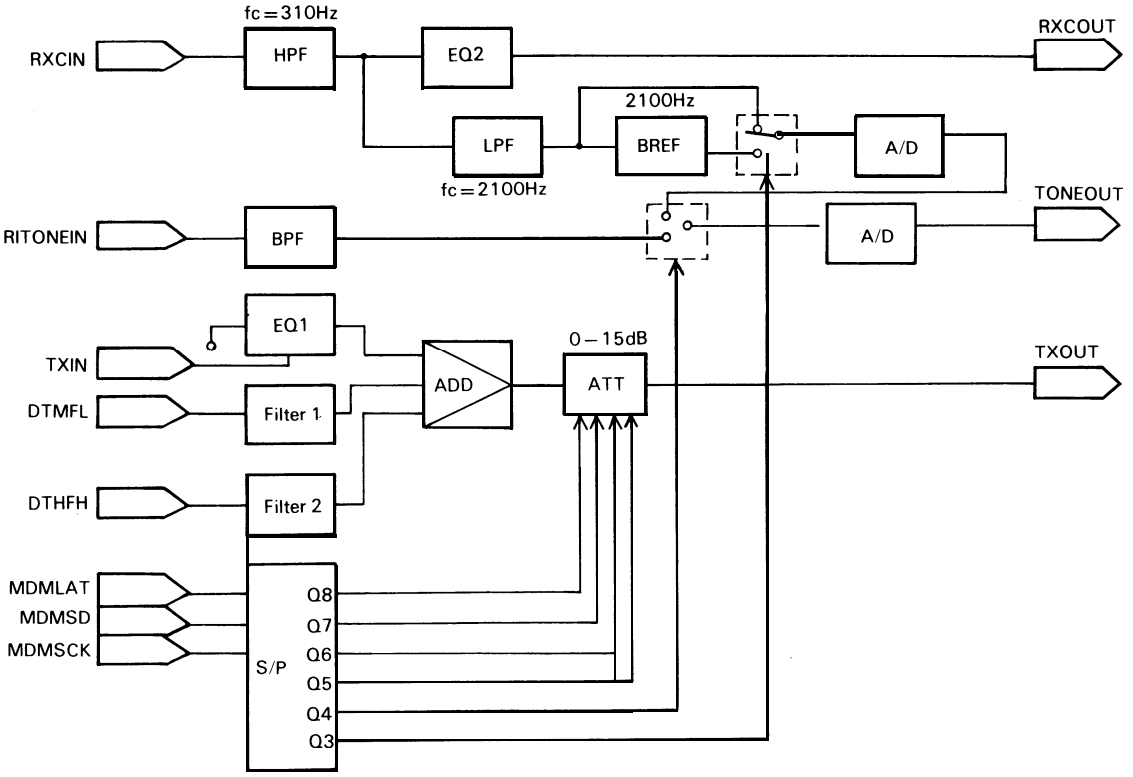
3-1 USA

– NCU –



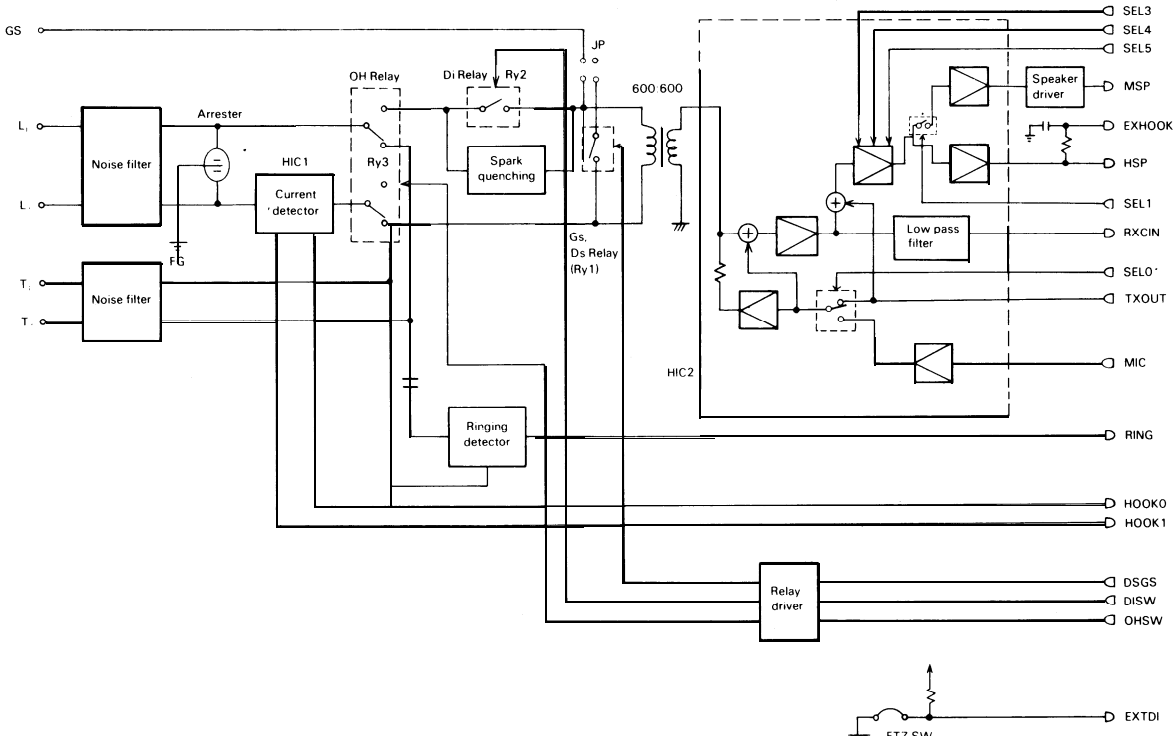


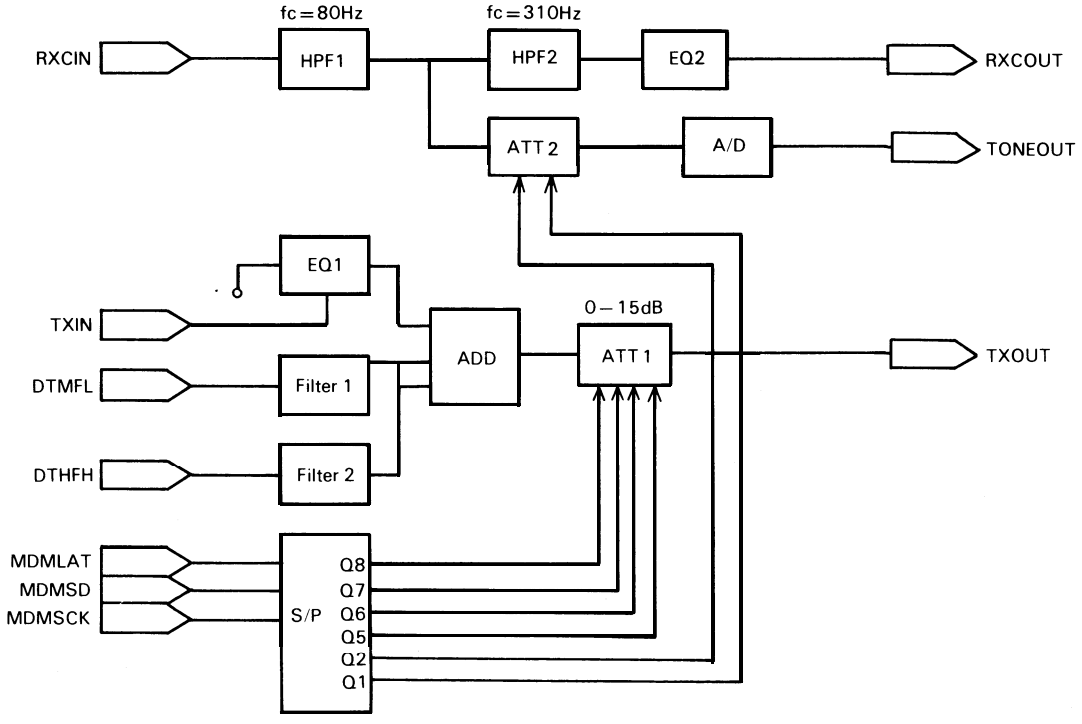
– MIF –


fc=310Hz
RXCIN
HPF
EQ2
RXCOUT
2100Hz
LPF
BREF
A/D
fc=2100Hz
TONEOUT
RITONEIN
BPF
A/D
EQ1
0–15dB
TXIN
ADD
ATT
TXOUT
DTMFL
Filter 1
DTHFH
Filter 2
MDMLAT
MDMSD
MDMSCK
S/P
Q8
Q7
Q6
Q5
Q4
Q3

3-2 Europe

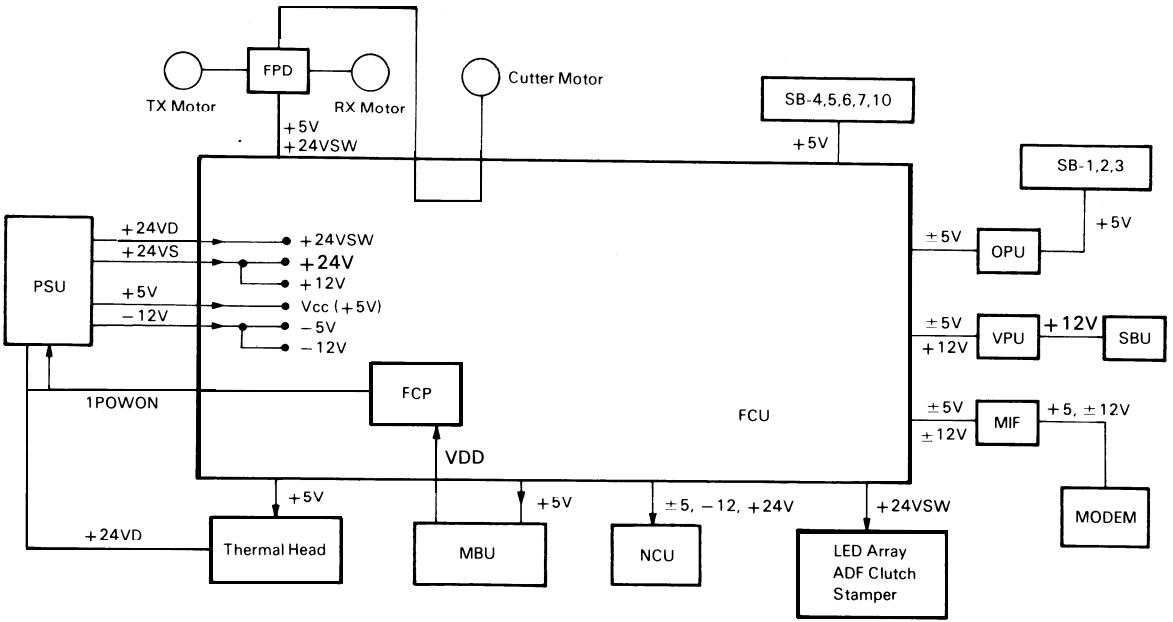
– NCU –

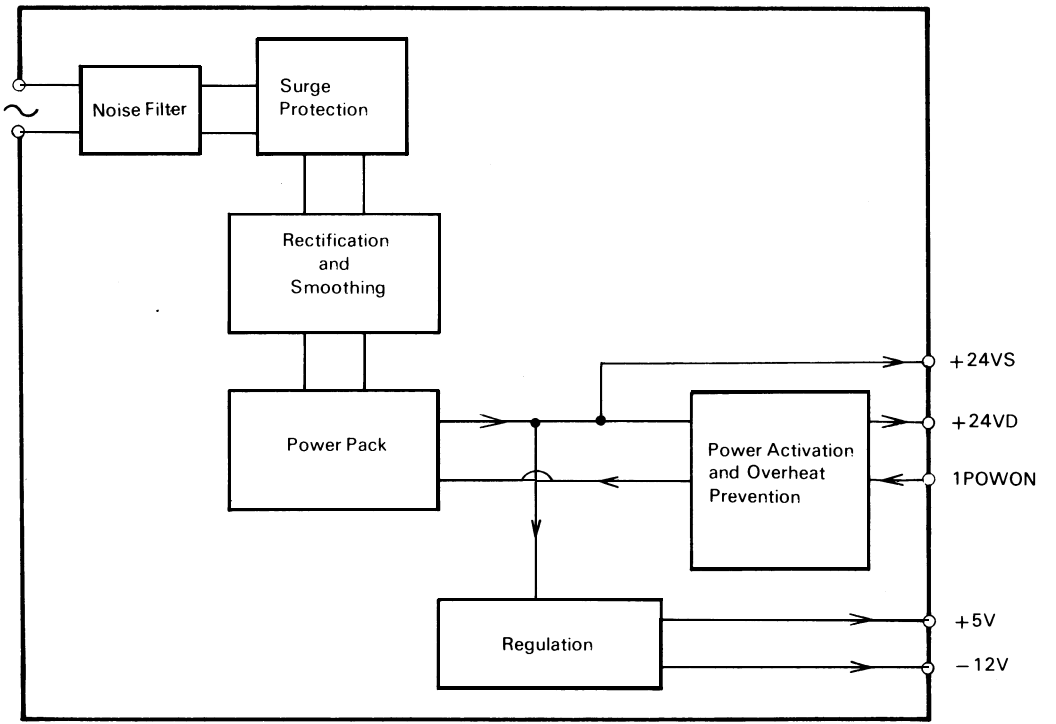



fc=80Hz
fc=310Hz
RXCIN
HPF1
HPF2
EQ2
RXCOUT
ATT 2
A/D
TONEOUT
EQ1
TXIN
ADD
0–15dB
ATT 1
TXOUT
DTMFL
Filter 1
DTHFH
Filter 2
MDMLAT
MDMSD
MDMSCK
S/P
Q8
Q7
Q6
Q5
Q2
Q1

4. Power Supply

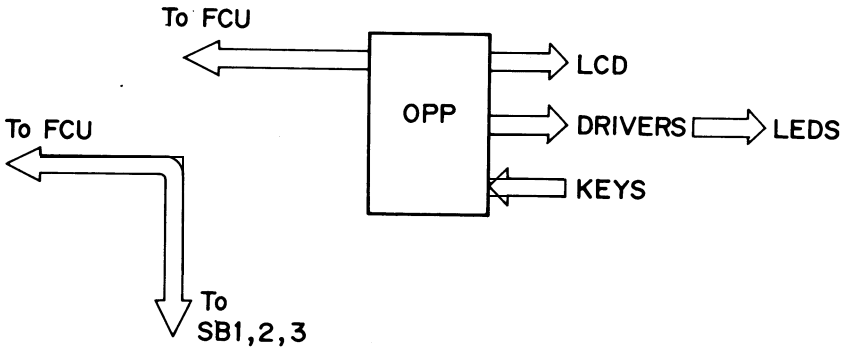
– Distribution –

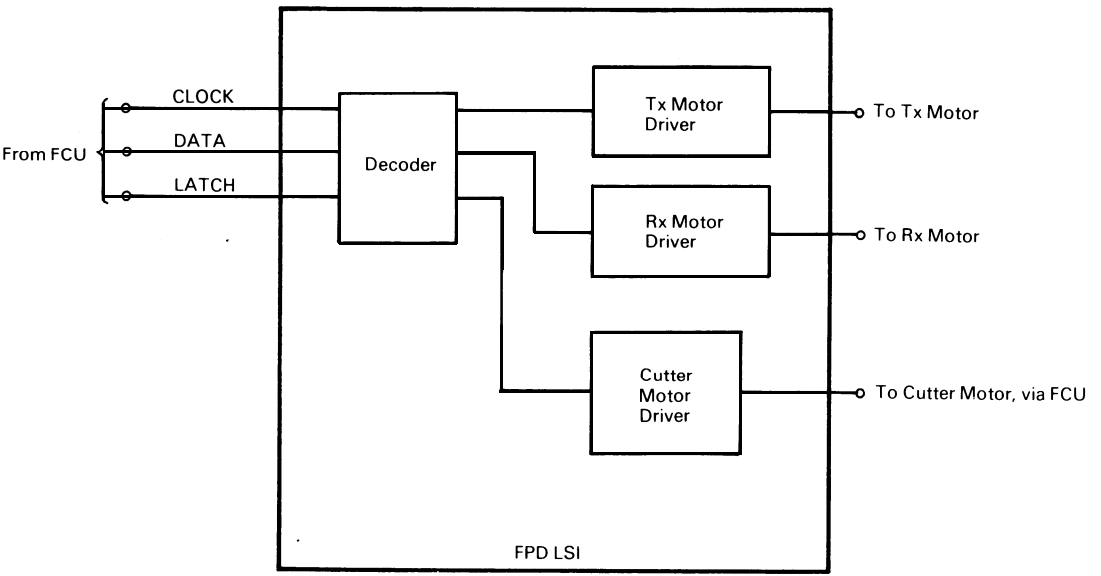



Noise Filter
Surge Protection
Rectification and Smoothing
Power Pack
Power Activation and Overheat Prevention
Regulation
+24VS
+24VD
1POWON
+5V
−12V

5. Others

– OPU –




CLOCK
DATA
LATCH
From FCU
Decoder
Tx Motor Driver
Rx Motor Driver
Cutter Motor Driver
To Tx Motor
To Rx Motor
To Cutter Motor, via FCU
FPD LSI

APPENDIX F. SENSOR TABLE

No.	Name	Type	Output H	Output L
SB- 1	Document sensor	Photointerrupter/Actuator	No paper	Paper
SB- 2	Scan line sensor	Photointerrupter/Actuator	No paper	Paper
SB- 3	Document width sensors	Photointerrupter/Actuator	No paper	Paper
SB- 4	Roll end sensor	Reflective photosensor	Paper	No paper
SB- 5	Printer jam sensor	Reflective photosensor	Paper	No paper
SB- 6	Printer paper width sensor	Microswitch	A 4	B4
SB- 7	Cutter sensor	Microswitch	Cutting	Home
SB-10	Top cover switch	Microswitch	Cover open	Cover closed

ADDITIONAL INFORMATION FOR THE RICOH K50 ECM SERIES FOR EUROPE AND ASIA

CONTENTS

SECTION 1

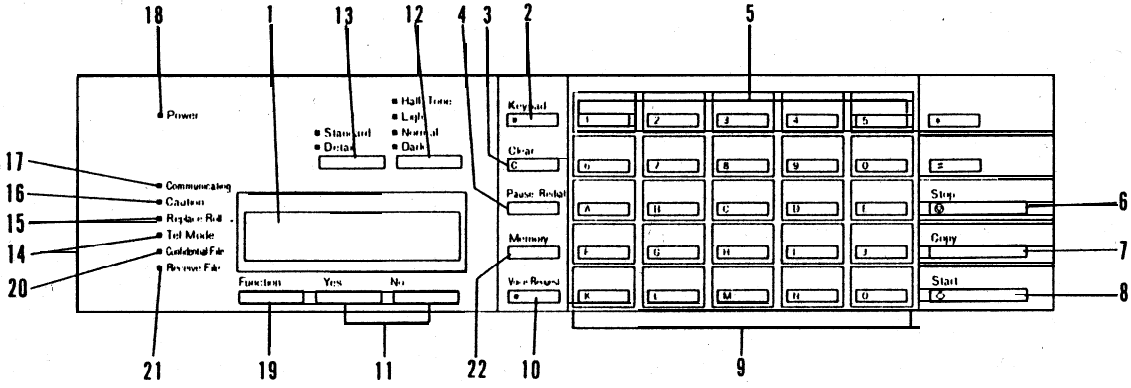
COMPONENT GUIDE

There are no new components, but the MIF, MBU, NCU and FCU have been modified.

SECTION 2

PROGRAMMING AND TESTING

2-1 K57 Operation Panel



No.	Name	Function
1.	Character Display	Displays prompts, status, and selected modes.
2.	Keypad Key	Press to enable or disable the numeric keypad section of the Quick Dial keypad.
3.	Clear Key	Press to clear the previously entered character, or use as a cursor, depending on the mode in use.

No.	Name	Function
4.	Pause/Redial Key	1) Press to insert a pause when entering a phone number. 2) Press to redial the last number dialed.
5.	Numeric Keypad	This zone of the Quick Dial keypad acts as a numeric keypad when the Keypad indicator is lit.
6.	stop Key	Stops operation and returns the machine to standby.
7.	Copy Key	Use to copy a document.
8.	Start Key	Use to start communication.
9.	Quick Dial Keys	Use to input a single phone number or a sequence of features and phone numbers with one touch.
10.	Voice Request Key	During communication, press this key to request voice contact with the other terminal's operator.

No.	Name	Function
11.	YES/NO Keys	Use to answer questions on the Character Display.
12.	Light, Normal, Dark Indicators and Key	These lamps indicate the selected contrast level. Light-for light original, Normal-for normal original, Dark-for dark original.
13.	Standard, Detail Indicators and Key	Indicates selected resolution. Standard-for normal text, Detail-for drawings or small print
14.	Tel Mode indicator	Lights when the machine is manual receive mode.
15.	Replace Roll Indicator	Blinks when the paper roll is almost empty and remains on when the roll is empty.
16.	Caution Indicator	Lights when a transmission failure, document misfeed/jam, or copy misfeed/jam occurs.
17.	Communicating Indicator	Lights during communication.
18.	Power Indicator	Lights when the power switch is on and AC power is supplied to machine.

No.	Name	Function
19.	Function Key	Press to enter the programming mode.
20.	Confidential File Indicator	Lights when a confidential message has been received.
21.	Receive File Indicator	Lights when a message was received but could not be printed because the printer was out of order (copy jam or no paper).
22.	Memory Key	Press this key to make a memory transmission.

2-2 Programming

– Initial Set Up -

The following items should be programmed or registered before starting operation. If these items are not set, the machines will not function at optimum potential.

— All models –

- **RTI/TTI/CSI**
- **Polling ID code**
- **Date and time**

— K53/K55/K57 –

- **One-touch Keys**
  a) Keystroke programs (K53 – up to 5, K55 - Up to 10 K57 - UP TO 5)
  b) Quick Dial keys (any number of vacant keys)
- **Speed Dial codes - Up to 90**
- **Groups**
- **Local terminal telephone number**
- **FAX/TEL setting**
- **Local terminal telephone type**
- **Refer to the Operation Manual for details.**

- K57 –

. Password

– User Function List –

– K52 –

Functions are accessed by a combination of keys.

TCR: **Hold down the Function key until the following is displayed.**

TX: 001563 RX: 001487
TCR COPY/N

Then, press Copy.

Others: **Hold down the Function Key until the following is displayed.**

ADJUST CLOCK? Y/N
NOV 25'87 15:30

Then press keys to access functions as follows:

– Europe –		- Asia –	
Clock Adjustment:	**Yes**	**Clock Adjustment:**	**Yes**
Polling ID:	**No then Yes.**	**Polling ID:**	**No then Yes.**
RTI:	**No x 2, then Yes.**	**RTI:**	**No x 2, then Yes.**
TTI:	**No x 3, then Yes.**	**TTI:**	**No x 3, then Yes.**
TTI On/Off:	**No x 4, then Yes.**	**CSI:**	**No x 4, then Yes.**
ECM On/Off:	**No x 5, then Yes.**	**TTI On/Off:**	**No x 5, then Yes.**
		ECM On/Off:	**No x 6, then Yes.**

*: Not used.

Europe NO.	Asia No.	Function
1	1	Confidential Transmission (not used in Germany)
2	2	Send Later
3	3	Transfer Request (not used in Germany)
4	4	Polling
50	50	Clock Adjustment
51	51	Fax/Tel Setting
52	52	Communicated Page Counter Check
53	53	Scanned and Printed Sheet Counter Check
54	54	Batch-number Enabling
55	55	Department Code Enabling
56	56	Speaker Volume Adjustment
*	57	Transmission Report Enabling
60	60	Quick Dial Programming
61	61	Group Programming
62	62	ID Code Programming
63	63	RTI Programming

Europe No.	Asia No.	Function
64	64	TTI Programming
*	65	CSI Programming
65	66	Clearing Polling Files
66	67	Clearing Memory Files (K57 Only)
70	70	TCR Printing
71	71	Telephone List Printing
72	72	Polling File List Printing
73	73	Program List Printing ;
74	74	SAF File List Printing (K57 only)
75	75	File Output (K57 only)
76	76	Confidential File Output (K57 only)
*	77	Multicopying (K57 only)
80	80	Entering Own Tel. No.
*	81	Telephone Line Type
81	82	TTI Disabling
*	83	Stamper Disabling
83	84	ECM Enabling/Disabling
82	89	Password Programming (K57 only)

- Summary of User Function -

Europe No.	Asia No.	Purpose	Remarks
1	1	To make a confidential transmission	You can specify the password if you wish.
2	2	To make a Send Later transmission	Enter the required transmission time in 24-hour clock format.
3	3	To send a message to more than one location through a broadcaster	All numbers must contain international dial and country codes. Function 80 must be programmed.
4	4	To poll or to set up your machine to be polled	
50	50	To enter the date and time	Increment with #, decrement with *, and move the cursor with Clear.
51	51	To select either automatic or manual reception	Press it to select FAX, and # to select TEL.
52	52	To view the communicated page counters	Press Yes after viewing.
53	53	To view the sheet feed counters	Press Yes after viewing.
54	54	To select the type of page numbering on the printout at the remote terminal	Press it for batch-numbering and # for simple numbering.

Europe No	Asia No.	Purpose	Remarks
55	55	To allow the user to use department codes	Press * to enable and # to disable.
56	56	To adjust the speaker volume	Increase with # and decrease with *.
*	57	To enable transmission report output	Press * to enable and # to disable.
60	60	To program Quick Dial keys and Speed Dial codes	Press the key or enter the code that you want to program. Then enter the number. For Quick Dial keys, you can also program a label. The method is the same as for RTI (see function 63).
61	61	To program groups	Groups can be labeled. There can be up to 7 groups.
62	62	To program the ID code needed for polling, transfer, and closed network communication	Enter the required code at the keypad. Do not use 0000 or FFFF.
63	63	To program the Remote Terminal Identifier. This is displayed on the remote terminal's operation panel during communication	Enter the identifier from the left. Increment the character at the cursor through the character set with #, and decrement with *. Move the cursor with Clear. Store the identifier by pressing Yes. Enter up to 20 characters.

Europe No,	Asia No.	Purpose	Remarks
64	64	To program the Transmitting Terminal Identifier. This is printed on the top of pages received at the remote terminal.	Up to 32 characters. Enter in the same way as the RTI.
*	65	To program the Called Subscriber Identifier. This is used in place of the RTI when communicating with a non-Ricoh machine.	Enter the telephone number (up to 20 numbers and spaces) at the keypad, then press #, then Yes.
65	66	To erase a pelting file	Enter the file number of the file to be erased. Refer to the Polling File List.
66	67	To erase a memory file	Enter the file number of the file to be erased. Refer to the SAF File List.
70	70	To print the Transaction Confirmation Report	
71	71	To print the Telephone List	Details on Quick Dial and Speed Dial Codes, groups, and full telephone numbers will be printed.
72	72	To print the Polling File List	Prints information on all stored polling files.
73	73	To print the Program List	Prints information on keystroke programs and the Quick Dial keys they are allocated to.

Europe No.	Asia No.	Purpose	Remarks
74	74	To print the SAF File List	Prints information on all memory files.
75	75	To print the contents of a memory file	
76	76	To print a confidential file	The correct password must be entered. This will not be the same as the password programmed in function 89 (Europe-function 82) if the sender specified a password.
*	77	To make more than one copy of a document	Up to 99 copies can be made.
80	80	To enter the terminal's telephone number	This must be programmed if you want to use Transfer Request. A pause must be entered and the international dial and country codes must also be entered.
*	81	To match the unit's dialing mode with the connected line	Press * for DTMF and # for pulse dialing.
81	82	To enable/disable TTI printout on copies at the remote terminal	Press * to enable and # to disable.
*	83	To enable the stamper	Press * to enable and # to disable.
83	84	To enable or disable ECM	Press * to enable and # to disable.

Europe No.	Asia No.	Purpose	Remarks
82	89	To program the password to be used for printing confidential files	Before storing a password, the old password must be entered. In a new machine, this password is 0000.

2-3 Service Mode

1. Entering and Exiting the Service Mode

– K52 –

Hold down the Stop key and switch the power on. Then hold down the Function key until "DISPLAY BITSW" is displayed as shown below.

Note: Wait 10 seconds before turning power back on due to possible damage to the PSU.

```
TX: 234567        RX: 234567
DISPLAY BITSW?          Y/N
```

To leave the service mode, either

. Switch off, wait for ten seconds, then switch back on.

• Change bit 7 of the data in RAM address 00B2 to 0

The RAM data is addressed in hex code. Change the left hand digit as shown on the next page. Do not change the right-hand digit.

Before Changing	Change To
8x	0x
9x	1x
Ax	2x
Bx	3x

Before Changing	Change To
Cx	4x
Dx	5x
Ex	6x
Fx	7X

x: Do not adjust

Press the Function key to exit service mode.

– K53/K55/K57 –

Keep the power on, and press 1,2,3,4 and 5 simultaneously.

After executing the required functions, exit the service mode by pressing 6,7,8,9, and 0 simultaneously.

- German versions of all models –

JP 12 on the NCU must still be shorted.

2. Function Tables

– K52 –

Each function is accessed by pushing a sequence of keys.

Keys	Function - Asia -	Function – Europe ––
F,Y	Bit switch programming	Bit switch programming
F,S,Y	ROM + RAM display, RAM rewriting	ROM + RAM display, RAM rewriting
F,2 x S,Y	CCITT and Maker code programming	CSI
F,3 x S,Y	Thermal head parameter programming	CCITT and Maker codes
F,4 x S,Y	Error code display	Thermal head parameters
F,5 x S,Y	Service report output	Error code display
F,6 x S,Y	System report	Service report output
F,7 x S,Y	ROM + RAM printout	System report
F,8 x S,Y	NCU parameter programming	ROM + RAM printout
F,9 x S,Y	Not used	NCU parameter programming

F = Function key (hold down for about 3 seconds)
S = Stop key
Y = Yes key

Each service function has a number.

Function Number	Function	Remarks
77	Multicopying	Europe only (enabled by bit switch)
88	CSI programming	Europe only
89	Telephone line type	Europe only
90	Bit Switch programming	
91	ROM, RAM display, RAM rewriting	Local terminal only
92	System Report	
93	ROM, RAM data printout	
94	Error code display	
95	Service Report	
96	CCITT and Maker code programming	CCITT = 0000 Maker = 25
97	Thermal head parameter programming	Enter the size and the pulse width
98	NCU parameter programming	
99	Maximum address limitation	Europe only

3. Test Mode

The K50 series has the following function tests,

* Modem test (G3 and G2 signal transmission)
* Operation panel test
* LED array lighting (for scanner adjustments)
* Sensor threshold initialization
* Tone transmission (DTMF and pulse signals)

The tone transmission test is not available on K52, as it has no auto-dialing.

1) Entering the Test Mode

1. K57 only – Print out all stored files, confidential receptions, and substitute receptions.
2. Hold down the Stop key, wait 10 seconds, and switch the power on.
3. When "ENABLE SERVICE FUNC." is displayed, press the Start key immediately. The following will appear.

   DENSITY: MDM, LCD, LAMP
   VOICE: SEN; TEL: DTMF

4. Make the required tests.

After testing:

. Switch the power off and on.

Note: Wait 10 seconds before turning power back on to avoid possible damage to the PSU.

. Instruct the user to re-store all memory files for transmission (K57 only).

The tests are the same as for the previous K50 series, with the following exception. In the K57, during the operation panel test, the following indicators should be blinking:

Replace Roll
Caution
Confidential File
Receive File

4. Dedicated Transmission Parameter Programming (K53/K55/K57only)

Each telephone number programmed as a Quick Dial key or Speed Dial code has three bytes in RAM allocated for transmission parameters.

Byte 1

Initial modem rate (bps)
(0, 0) = 9600 (0, 1) = 7200
(1, 0) = 4800 (1, 1) = 2400

Transmission level
Example: (1, 1, 0, 0) = −3dB

Compression
0: MH/MR 1: MH

Byte 2

Program Enable/Disable

Bit 0 DIS detection
0: First
1: Second (First DIS is ignored)

Bit 1 ECM
0: Used 1: Not used

Bit 7 Short preamble
0: Not used 1: Used

0: Transmissions to this remote terminal will use parameters as specified by the bit switch settings.

1 : The dedicated parameters in bytes 1 – 3 will be used.

Byte 3 CCITT T1 time, in units of 2.56 seconds
Example: 60 seconds
60/2.56 = 24 approx
Byte 3 contains 18 (H) = 00011000

The RAM addresses are the same as for the previous K50 series.

2-4 Communication Quality Checks for K57

In addition to those tests for the previous K50 series, also test the following.

- **Closed network communication**
- **Confidential reception**
- **Substitute reception**

SECTION 3

REMOVAL AND REPLACEMENT

3-1 K52/K53/K55

The procedures are the same as for the previous K50 series.

3-2 K57

Before switching off the power, print out all stored files, confidential receptions, and substitute receptions.
After switching back on, instruct the user tore-store all memory files for transmission.
The procedures are the same as for the K55, except for the following:

– Cautions for PCB Replacement –

Before changing the MBU, print the following reports in addition to those for the K55.

- SAF File List — give to the user
- Stored memory files, such as confidential messages (see section 4-2) - give to the user.

After changing the MBU, instruct the user to re-store all memory files for transmission.

SECTION 4

TROUBLESHOOTING

4-1 Error Codes

The following error codes have been introduced.

– G3 Transmission –

Code	Cause	Required Action
0-52	Polarity change occured	Retry the transmission

Code	Cause	Required Action
4-00	One page took longer than eight minutes to transmit	Resend the message
4-01	Line current was cut	Reattempt the communication
4-02	The remote terminal cut the received page because it was longer than the maximum limit .	Resend the message if necessary, after changing the remote terminal's maximum receive length.
4-10	K57 only – communication failed because of polling ID mismatch when using closed network or CSI/TeL No. mismatch when using protection against wrong connections.	Redial

Note: Error codes 4-xx do not appear on Error Reports.

Code	Cause	Required Action
5-00	DR circuit does not work	Replace FCU if persistent.
5-20	Storage impossible because either: • Memory all used up . File tables all full . Mode tables all full	No action; temporary memory shortage
5-21	Memory overflow	
5-22	Mode tables became all full while storing the second or subsequent page of a document	
5-23	A confidential or substitute reception had poor image quality	Ask sender to retransmit.
5-24	The SAF memory became full while storing the second or subsquent page of a document	No action; temporary memory shortage
5-30	While printing the first page of a file, all mode tables became used up	

Code	Cause	Required Action
6-00	11 timer ran out	Retry the communication.
6-01	Protocol cannot be received	
6-02	EOR received	
6-03	Unexpected or abnormal protocol signal received	
6-04	Cutter did not operate because RTC was not received.	
6-05	Facsimile data frame not received (line fail does not occur).	
6-06	DCR error	

Code	Cause	Required Action
6-08	PIP/PIN was received in reply to PPS. NULL	Retry the communication.
6-09	ERR received	
6-10	Error frames still received at other end after all communication attempts at 2400 bps.	
6-99	A protocol signal took more than 6s to transmit.	

4-2 Confidential File Printout (K57)

If the user has forgotten the password, you can find it on the system report (function 92).

However, if the user cannot find out the personal ID) specified by the sender, which overrides the password, then use the following procedure.

1. **When the machine is in standby, simultaneously press 1,2,3,4 and 5 to enter the service mode.**

2. **Press the Function key, enter 75, then press Yes.**

3. **Enter #1.**

4. **Press Copy.**
   All memory files will be printed, including confidential files. However, they will not be erased from memory,

   To erase the confidential files from memory:

   1. **Print a SAF File List using function 74.**

   2. **Switch the machine off, wait for ten seconds, then switch back on.**

   3. **Reprogram SAF files for transmission.**

4-3 ECM Communication Troubleshooting

Communication tests in areas with frequent bad lines have led to the following countermeasures.

1. Excessive Impulse Noise

Reduce the frame size to 64 octets.
To do this, set bit 1 of bit switch 1A to 1.

2. Poor Signal-to-noise Ratio

Adjust the training error tolerance with bits 6 and 7 of bit switch 8. The most effective setting is different for each data rate, as follows.

9600 bps: 0
7200 bps: 2
4800 bps: 4 *
2400 bps: 15

*** The K50 ECM can not use this setting, so try either 2 or 10.**

APPENDIX A. BIT SWITCHES

[BIT SW 0]

BIT NO.	Function	Remarks
0	Back to Back function 1; Enabled When this bit is set to" 1", the Start key is enabled without picking up the handset.	To connect two machines directly and check the communication
1	Memory Read/Write request 1; Not acceptable When this bit is set to" 1", a memory Read/Write request is not accepted.	This bit should be "0" when RAM data is to be changed from the service center by a K10 series mathine.
2	Operator call after no response to DIS 0; Enabled 1; Disabled	
3	Program key operation (Austrian PTT) 0; No Guidance 1; Guidance	
4 5 6	Not used.	

BIT No.	Function	Remarks
7	Communication parameter display 1; Display enabled When connected in GIII mode, the communication parameters are displayed during communication. Data are displayed as shown below.	To confirm the communication parameters. Note that the size in the third column refers to the transmitted size (after reduction), i.e., the-paper size in the receiver.

96,	S	2D,	AN,	DCS,	10M,
Modem rate	Resolution	Coding	Size and reduction	Mode	I/O rate
96:9600 bps	S: Standard	1D: MH	A: A4 size	DCS:CCITT	10M
72:7200 bps	D: Detail	20: MR	N: No reduction	standard mode	20M
48:4800 bps		1 E: EFC and MH	B: B4 size	NSS: Non-standard	40M
24:2400 bps		2E: EFC and MR	R: Reduction	mode (RICOH)	

[BIT SW 1]

BIT NO.	Function	Remarks
0	Fax/Tel selection 0; Fax 1; Tel This bit can be changed by Function 51 (K53/K55/K57) or Tel mode key (K52). When 'this bit is set to" 1", automatic receiving is not available.	
1	Resolution selection at power-up 0; Standard 1; Detail	
2	Home position set for resolution 1; As specified in bit 1 When communication is finished, the resolution returns to that selected by bit No. 1 if this bit is"1".	
3 4	Original contrast selection at power-up 0 0 Normal 1 0 Dark 0 1 Light 1 1 Halftone (K52: Light) The contrast selected by these bits is selected at power-up arid when transmission is completed.	

BIT No.	Function	Remarks
5	**Setting of keypad standby default mode** **0; Speed Dial 1; Full telephone numbers**	
6	**Home position set for contrast** **0; Contrast does not reset after the end of transmission** **1; As specified in bits 3 and 4.**	
7	**MTF 0; Enabled 1; Disabled**	

[BIT SW 2]

BIT No.	Function	Remarks
0 1	Transmission modem rate 0 0 } 9600 bps 1 0 } 7200 bps 0 1 } 4800 bps 1 1 } 2400 bps	
2 3	I/O rate in standard mode for transmission 0 0 } 10 ms 1 0 } 20 ms 0 1 1 1 } 40 ms	
4	I/O rate in detail mode for transmission 0; Two times as fast as the standard mode 1; The same speed as the standard mode	If bit 4 is O and bits 2 and 3 are also 0, the I/O rate in detail mode is 10ms.
5	Selection of EFC Function in transmit mode 0; EFC priority 1; EFC disabled	
6	Selection of Coding 0; MR priority 1; MH only	
7	Recognition of remote terminal's paper length 0; No limit is recognized 1; Limit is recognized. MPS is sent after receiving the length specified by the remote terminal. The remote terminal may designate a fixed paper length such as A4 or B4.	

[BIT SW 3]

BIT No.	Function	Remarks
0 1 2 3	Transmission level from modem 0 0 –1 dB 1 : 0 dB 0: - 2 dB 1 : 0 dB 0: - 4dB 1 : 0 dB 0: – 8 dB 1 : 0 dB	To change the transmission level The Tx level is the sum of these 4 bits.
4 5	Protection against wrong connections 0 0 No protection 0 1 When CSI number from the remote terminal is different from the telephone number entered, transmission is stopped. 1 0 / 1 1 When CSI or RTI is not sent from the remote terminal, transmission is stopped.	Set it when the customer desires. If there is a wrong connection and protection is enabled, the TCR indicates E if bit 6 of BITSW 4 is 1, but there is no error code.
6 7	Handshake modem rate for protocol when transmitting 0 0 300 bps 1 0 2400 bps 0 1 / 1 1 300 and 2400 bps	Setting other than (0, 0) are for use in France only.

[BIT SW 4]

BIT No.	Function	Remarks
0	Hang-up decision when a negative code (RTN or PIN) is received. 0; No hang-up 1; Hang-up	
1	Echo countermeasure 0; Enabled When the same code that was sent is received, it is ignored.	If this is set to 1, the machine will disconnect instead of ignoring echoes.
2	CNG signal transmission in manual transmission mode 0; Enabled For automatic dialing, this bit should be 0.	
3	DIS detection times (Echo countermeasure for transmission) 0: Once 1; Twice	If this is set to 1, the machine will wait for a second DIS before returning DCS.
4 5	Page retransmission times 0 0 } None 1 0 } Once (for K57) 0 1 } Twice (for K57) 1 1 } Three times (for K57)	

BIT NO.	Function	Remarks
6	**Printing condition of TCR** **0: Results of communications which were disconnected before transmission/reception of image data are not printed.** **1: All communications are listed**	
7	**NCU type** **0: Programmable** **1: Permissive**	

[BIT SW 5]

BIT No.	Function	Remarks
0	Display priority between NSF (CSI) and CSI 0; NSF (CSI) priority 1 ; CSI When both NSF (CSI) and CSI frames are received, the frame with priority is displayed,	
1	NSF (CSI) and CSI frame display decision 0; Displays the frame with priority 1; Displays both frames	
2	NSF (CSI) and/or CSI frame display decision 0; Displayed When this bit is"1", bits 0 and 1 are ignored.	
3	NSF frame reception 0; Enabled	
4	Transmission of the TSI frame before the DCS code 0; Enabled	
5	Transmission of the NSS (TSI) frame after NSS(S) 0; Enabled	
6	GI (Group identification) signal reception in G2 mode 0; Enabled	
7	Polling (only K52) 1; Free 0; Secured	

[BIT SW 6]

BIT No.	Function	Remarks
0	Confidential transmission 0; Enabled 1; Disabled	FTZ specification
1	Transfer request 0; Enabled 1; Disabled	FTZ specification
2	End of page signal after 8 minutes 0; Disabled 1; Transmitter sends an end-of-page signal if the page takes longer than 8 minutes to transmit. The receiver outputs the rest of the page on a separate sheet.	FTZ specification
3	Printout of part of transmitted message on memory transmission report even if there was no error. 0; Disabled 1; Enabled	
4	Resolution in A3-to-A4 reduction mode during G3 transmission 0; Detail 1; Resolution which is selected	

BIT No.	Function	Remarks
5	**Reduction in transmission (K55/K57)** **0; Enabled** **Document width / Paper width at the remote termial / Reduction** **A3 / 94 / Reduced to B4** **A3 / A4 / Reduced to A4** **B4 / A4 / Reduced to A4** **1; Disabled** **The width of transmitted data will match the paper width which is set in the remote terminal; left and right edges will be lost.** **Note: When this bit is set to"1", bit no. 4 is ignored.**	
6	**G 1 mode** **1; Disabled**	**U.S.A. only**
7	**Conditions for going into transmit mode** **0; After detecting polarity change and CED** **1; Goes into Tx mode after detecting any frame**	

[BIT SW 7]

BIT NO.	Function	Remarks
0	Line error counter method 0; Selects bit no. 1 method 1; Selects bit no. 2/3 and bit no. 4/5/6 method	
1	Line error counter decrement during G3 reception 0; Decremented by 1 every time 10 lines are received perfectly. 1; Disabled When a line error occurs, the error counter increases by 1. When the counter reaches 10, RTN is sent.	
2	New FTZ Quality Criterion - Threshold value for line errors.	Values for detailed resolution are in parenthesis.
3	0 0 } 3 (6) lines; 1 0 } 4 (8) lines; 0 1 } 5 (10) lines; 1 1 } 6(12) lines	In the new FTZ quality check, the error line counter will be decremented by one every time an error-free line is received.
4 5 6	New FTZ Quality Criterion -- Error Line Ratio (Error Lines/Total Lines * 100) 0 0 0 } 5%; 1 0 0 } 6%; 0 1 0 } 7%; 1 1 0 } 8%; 0 0 1 } 9%; 1 0 1 } 10%	
7	Reconstruction time for the first line 0; 6s 1;10s	

[BIT SW 8]

BIT No.	Function	Remarks
0	Longest receivable document 0; Unlimited 1; A4 length	Set this to 1 when the user requires all received copies to be cut into A4 lengths.
1	EFC function in receive mode 0; Enabled	
2	Coding method to be notified to the transmitting terminal 0; MH and MR 1; MH only	
3 4	Modem types to be notified to the transmitting terminal 3: 0 } V29, 1 } V27 ter, 0, 1 } V27 ter fall back 4: 0 } V27 ter, 0 }, 1, 1 }	
5	Receiver training error counter method 0; For USA, Asia, etc. 1; For Europe only	
6 7	Receiver training error tolerance USA, Asia, etc. 6: 0 0 } 15 bits, 1 0 } 10 bits, 0 1 } 2 bits, 1 1 } 0 bits For Europe only 6: 0 0 } 14 bits, 1 0 } 9 bits, 0 1 } 4 bits, 1 1 } 1 bits	

[BIT SW 9]

BIT No.	Function	Remarks
0	Resolution to be notified to the transmitting terminal 0; 3.85 (Standard) and 7.7 (Detail) 1; 3.85 only	
1 2	Handshake modem rate for protocol when receiving 0 0 } 300 bps 1 0 } 2400 bps 0 1 / 1 1 } 300 and 2400 bps	Settings other than (0,0) are for use in France only.
3 4	Modem rate for the start of reception 0 0 } 9600 bps 1 0 } 7200 bps 0 1 } 4800 bps 1 1 } 2400 bps	
5 6	I/O rate in standard mode for reception 0 0 } 10 ms 1 0 } 20 ms 0,1 / 1,1 } 40 ms	
7	I/O rate in detail mode for reception 0; Two times as fast as the standard mode 1; The same speed as the standard mode	If bit 7 is 0 and bits 5 and 6 are also 0, the I/O rate in detail mode is 10ms.

[BIT SW A]

BIT No.	Function	Remarks
0	Transmission of NSF(S) frame 0; Enabled	
1	Transmission of NSF(CSI) frame 0; Enabled	
2	Transmission of CSI frame 0; Enabled	
3	Transmission of Group Identification signal 0; Enabled	
4	Substitute reception 1; Disabled	For Europe
5	Confidential reception 1; Disabled	For Europe
6	Condition for SAF reception 1; SAF can receive only when a TSI or NSS (TSI) frame is received from the remote terminal. 0; SAF can receive even when a TSI or NSS (TSI) frame is not detected.	
7	Countermeasure for horizontal white lines on copies (pairing) 0; Off 1;On	

[BIT SW B]

BIT No.	Function	Remarks
0	Confidential transmission or reception with personal ID 1; Disabled	
1	Communication mode at power up 0; AUTO 1;G2	
2	Compatibility with MV 1200 1; Enabled	
3	FTZ Specifications 1; Enabled	For Kalle
4	Voice Identification 1; Disabled	
5 6 7	Not used.	U.S.A. only

[BIT SW C]

BIT No.	Function	Remarks
0	Monitor speaker during transmission 1 ; Disabled at all times during transmission	
1 2 3	Monitor speaker volume during transmission 0;0 dB 1; + 3dB 0;0 dB 1; + 6dB 0;0 dB 1; + 12 dB	Changed by function 56.
4	Monitor speaker during reception 1; Disabled at all times during reception	
5 6 7	Monitor speaker volume during reception 0;0 dB 1; + 3dB 0;0 dB 1; + 6dB 0;0 dB 1; + 12 dB	Changed by function 56.

[BIT SW D]

BIT No.	Function	Remarks
0	Transmission report output 0; Enabled	
1	Error report output 0; Enabled	
2	Automatic TCR output 0; Output automatically every 35 communications 1; Not output automatically	
3	TCR memory cleared after output 1; TCR memory cleared TCR memory is cleared after a manual TCR (Function 70) is performed.	
4	TSI printing 0; Enabled When this bit is set at 0, the TSI or NSS (TSI) sent from the transmitter is printed at the head of the output data.	If this is enabled and if bit 3 of bit switch F is 1, the TSI will be printed on top of the RTI.

BIT No.	Function	Remarks
5	Clearing of the transmission confirmation report memory 1: Clear When the stop button or function button is pressed, or when the timer is exceeded after this bit is set at 1, TCR, Service Report, Error Report and error codes are all cleared. After erasing, the bit is automatically set back to 0.	
6	Clearing of the transmit and receive counters/scanned and printed document counters 1; Clear When the stop button or function button is pressed, or when the timer is exceeded after this bit is set at 1, the counters are cleared. When they are cleared, this bit is automatically set back to 0.	
7	RAM clear and reset After this bit is set to 1, the CPU resets the machine to all default settings.	Factory use only

[BIT SW E]

BIT NO.	Function	Remarks
0 1	Maximum transmittable document length 0 0 } 600 mm 1 0 } 1.2 m 0 1 } 14 m	(1,1) is not used.
2	Minimum printout length 0; 75 mm 1; 150) mm (A5 length)	
3	Printer paper width 0; Read from sensor 1 ; Taken as A width; informs A width in protocol	
4	Thermal Head Size 0; B4 size 1; A4 size	Changed by function 97.
5	Di relay on time interval when dialing with handset 0; 0.5s 1;1s	
6	Stamper (Asian K55/K57 models only) 0; Enabled	
7	Monitor speaker status during video data communication 0; off 1;On	

[BIT SW F]

BIT No.	Function	Remarks
0	TTI date output 0; Transmitted as document data 1 ; Not transmitted	
1	TTI character output 0; Transmitted 1; Not transmitted	
2	TTI page number output 0; Transmitted 1 ; Not transmitted	
3	TTI printing start position This is the distance of the time/date information in from the scan start position. 0; 24 mm 1 ; 48 mm	
4	TTI printing during copying 0; Prohibited 1; Printed	
5 6	Buzzer volume during operator call for Voice Request 0 0 } Loud 1 0 } Weak 0 1 } Medium 1 1 } OFF	
7	Pause key input indication on display panel 1; "–" 0; "P"	

[BIT SW 10]

BIT No.	Function	Remarks
0	Page count prompt 0; Displayed 1; Not displayed	Changed by function 54.
1	Department code prompt 0; Displayed 1; Not displayed	Changed by function 55.
2	Page numbering on copies made in multicopy mode 0; Batch-numbering 1; No numbering	
3	EFC prompt 0; Displayed	FTZ specification
4	Reduction prompt 0; Displayed	FTZ specification
5	Resolution prompt 0; Displayed	FTZ specification
6	Closed network reception 0; Disabled 1; Enabled	
7	Closed network transmission 0; Disabled 1; Enabled	

[BIT SW 11]

<table>
<tr><th>BIT No.</th><th>Function</th><th>Remarks</th></tr>
<tr><td>0
1
2
3
4</td><td>Country code of the local terminal

<table>
<tr><td>BIT NO.</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr>
<tr><td>Germany</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td></tr>
<tr><td>England</td><td>0</td><td>0</td><td>0</td><td>1</td><td>0</td></tr>
<tr><td>Italy</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Austria</td><td>0</td><td>0</td><td>1</td><td>0</td><td>0</td></tr>
<tr><td>Belgium</td><td>0</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
<tr><td>Denmark</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td></tr>
<tr><td>Finland</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Ireland</td><td>0</td><td>1</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Norway</td><td>0</td><td>1</td><td>0</td><td>0</td><td>1</td></tr>
<tr><td>Sweden</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td></tr>
<tr><td>Switzerland</td><td>0</td><td>1</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Portugal</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td></tr>
<tr><td>Netherlands</td><td>0</td><td>1</td><td>1</td><td>0</td><td>1</td></tr>
<tr><td>U.S.A</td><td>1</td><td>0</td><td>0</td><td>0</td><td>1</td></tr>
<tr><td>Asia</td><td>1</td><td>0</td><td>0</td><td>1</td><td>0</td></tr>
<tr><td>Japan</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
</table></td><td>For enabling the required set of PTT parameters.</td></tr>
<tr><td>5</td><td>Not used (Japan only)</td><td></td></tr>
<tr><td>6
7</td><td>PSTN access method through PABX

<table>
<tr><td></td><td>BIT NO.</td><td>7</td><td>6</td></tr>
<tr><td></td><td>No PABX</td><td>0</td><td>0</td></tr>
<tr><td rowspan="3">PABX</td><td>Loop Start</td><td>0</td><td>1</td></tr>
<tr><td>Ground Start</td><td>1</td><td>0</td></tr>
<tr><td>Flash Start</td><td>1</td><td>1</td></tr>
</table></td><td></td></tr>
</table>

[BIT SW 12]

BIT No.	Function	Remarks
0 1	Dialing method in pulse dial mode BIT NO. 1 0 P = N 0 0 Normal P = 10 − N 0 1 Oslo P = N + 1 1 0 Sweden P: Number of pulses N: Dialed No.	Note that in normal mode, 0 is 10 pulses.
2	Dial tone detection (PSTN) 0:Enabled	Europe only
3	Busy and ringback tone detection 0; Enabled	Europe only
4	Line current detection 0; Enabled	Europe only
5	Dial tone detection (PABX) 0; Enabled	Europe only
6	Redial when T 1 timer exceeded 0; Enabled 1; Disabled (for Austria and Norway)	
7	Dialing method 0; DTMF 1;PD	

[BIT SW 13]

BIT No.	Function	Remarks
0	Access Number Registration for connection to PSTN.	
1		
2		
3	Access No. Hex value of BITSW13 0 → F0 ↓ ↓ 9 → F9	Example: Code 0 Set bits 0 → 3 to 0 and bits 4 → 7 to 1. FF: disabled
4		
5	00 → 00 ↓ ↓	
6	99 → 99	
7	If the machine detects this access code at the start of a telephone number, it will close the dc loop, then pause for a few seconds before continuing. This function is only enabled when bit switch 11, bits 6 and 7 select Loop Start.	

[BIT SW 14]

BIT No.	Function	Remarks
0	ADF or Cutter Test Mode 1; Enabled To test the ADF, set a document and press Copy. To test the cutter, press Copy. This tests mechanisms only; scanning and printing do not take place.	
1	Not used.	
2 3 4	Non-ECM version Maximum Voice ID length ECM version Bit 2 0; FM reception disabled Bit 3 0; 1500 Hz reception disabled Bit 4 0; G1 multipage reception disabled	Maximum Voice ID length in the ECM version is always 16s.
5	Ground start 0; Disabled 1; Enabled	To enable ground start, set this bit to 1, and adjust the NCU jumpers.

BIT No.	Function	Remarks
6	Not used	Japan only
7	Dial pulse rate 0; 20 pps 1;10pps	

[BIT SW 15]

BIT No.	Function	Remarks
0 1	Machine type 0 0 } K52/K53 1 1 } K55/K57	Selects the appropriate stepper motor and printer control.
2	Pulse width cut by 12%, when using halftone with copy mode and detailed resolution 0; Disabled 1; Enabled	
3	Halftone dither. method 0; 64 levels 1; 16 levels	
4	Smoothing 1; Enabled	
5	Near End display (blinking Replace Roll indicator) 0; Enabled	The Near End counter will be reset when SB10 turns OFF/ON after the Replace Roll indicator lights.
6	When the copy count is more than 30 in copy mode 0; Copy is disabled. 1; Machine stops for 40 sec. per 1 sheet.	
7	Result report 0; Enabled 1; Disabled	This affects the Polling File List and Memory Transmission Report.

[BIT SW 16]

BIT No.	Function	Remarks
0	Monitor speaker in dialing mode O; Enabled	
1 2 3	Monitor speaker volume in dialing mode 0; 0 dB 1; + 3dB 0; 0 dB 1; + 6dB 0; 0 dB 1; + 12dB	Changed by function 56.
4	Not used.	
5 6	Buzzer volume for ringing signals 0 / 0 } Loud 1 / 0 } Medium 0 / 1 } Weak 1 / 1 } Off	
7	On-hook dial 0; Enabled	U.S.A. only

[BIT SW 17]

BIT NO.	Function	Remarks
0 ↑ 2	Not used.	U.S.A. only
3 4 5	Not used.	U.S.A. only
6 7	Not used.	

[BIT SW 18]

BIT No.	Function	Remarks
0	Automatic memory report output 0; Enabled 1 ; Disabled	
1	Image data on memory transmission report when Tx failed. 0; Included 1; Not included	
2	Length of reproduced image data on memory transmission report 0; 150 mm 1; 250 mm Only valid of bit 1 is set to 1.	
3	Multicopy 0; Disabled 1; Enabled	
4	Reduction when printing out a message received by substitute reception 0; Enabled 1; Disabled	
5	Treatment of messages received by substitute reception 0; Erased after printing 1; Not erased after printing	

BIT No.	Function	Remarks
6	Use of Quick Dial key “N” to toggle between stamper On/Off 0; Disabled 1; Enabled If enabled, key “N” cannot be used to store a telephone number or keystroke program.	Asia only (K55/57)
7	Use of Quick Dial key “0” to toggle between Fax and Tel modes . 0; Disabled 1; Enabled If enabled, key “0” cannot used to store a telephone number or keystroke program.	

[BIT SW 19]

BIT No.	Function	Remarks
0	Action when paper ends during substitute reception 0; Data coming in after paper end is stored in the SAF 1; Communication ends after paper runs out.	
1	Action when Rx errors occur during substitute reception 0; Data is erased. 1; Data is kept."	
2	Action when memory overflows during substitute reception 0; Only complete pages are kept. 1; The latest page is kept even if it cannot be completely stored.	
3	Not used.	Keep at 1.
4	Not used.	U.S.A. only
5 6 7	Not used.	U.S.A. only

[BIT SW 1A]

BIT No.	Function	Remarks
0	ECM in transmission 0; Enabled	
1	Frame size 0; 256 octets 1; 64 octets	
2	CTC transmission 0; Used. 1; Not used (always sends EOR)	
3	CTC shiftdown 0; Enabled	
4	End of page alignment before RCP 0; End of current octet 1; End of current frame	
5	CTC fallback method 0; Ricoh non-standard (only for use between Ricoh machines) 1; CCITT method	

BIT No.	Function	Remarks
6	Maximum number of PPR frames that can be received after sending CTC without data rate fallback, before sending DCN. 0;3 1;4	
7	ECM in reception 0; Enabled	

[BIT SW 1B]

BIT No.	Function	Remarks
0	Short preamble in transmit mode 1; Enabled	
1	Short preamble in receive mode 1; Enabled	
2	Page printout timing 0; Page is printed out until an error frame is received. 1; Page is printed only when all frames have been correctly received.	
3	Flow control based on remote receiver's printer speed 0; None 1; When transmitting, the K50 ECM terminal sends data in blocks; each block needs one minute to be printed at the remote terminal.	
4	Action on receiving EOR 0; Ricoh mode – Prints the block up to first error frame, then cuts the line. 1; CCITT mode – Prints the block up to first error frame, then next block will be sent at the original data rate (before fallback).	

BIT No.	Function	Remarks
5	Not used.	
6	ECM transmission with halftone mode 0; In the transmission mode, if halftone is selected, ECM is disabled. During ECM communication, halftone cannot be selected. 1; Both halftone and ECM can be selected at the same time.	
7	ECM mode: Data rate for next page (after EOM) if there was fallback in the page just sent. 0; As for end of page just sent 1; Original data rate before fallback (specified by bit switch 2) Non-ECM mode: Action when RTN is received. 0; Next page transmitted at a lower data rate 1; Next page transmitted at the same speed	

[BIT SW 1C]

BIT No.	Function	Remarks
0 1	G 1 threshold frequency 0; Enabled 0 0 } 1950 Hz 1 0 } 2050 Hz 0 1 } 2000 Hz 1 1 } 2100 Hz	
2	Cable equalization in receive mode 1; Enabled	
3 4	Cable equalization in receive mode 0 0 } 0 km 1 0 } 1.8 km 0 1 } 3.6 km 1 1 } 7.2 km	
5	Cable equalization in transmit mode 1; Enabled	
6 7	Cable equalization in transmit mode 0 0 } 0 km 1 0 } 1.8 km 0 1 } 3.6 km 1 1 } 7.2 km	

Bit switch 1D is only used in Japan – do not adjust the factory settings.

[BIT SW 1E]

BIT No.	Function	Remarks
0	ECM in Tx mode (FTZ specification) When this bit is 1, bits 1 and 2 of BIT SW 1E are ignored and ECM cannot be selected by function 83.	
1	Standby default setting of ECM 0; As specified in bit2 1; Bit 2 is ignored	
2	Standby default setting of ECM 0; On 1 ; off	
3 4 5 6 7	Not used.	

Bit switch 1F is not used.

- Factory Settings of Bit SW for the United Kingdom –

Bit Switch	K57	K55	K53	K52
0	02	02	02	02
1	40	40	40	40
2	00	00	00	00
3	06	06	06	06
4	96	86	86	86
5	00	00	00	00
6	C0	C0	C0	C2
7	00	00	00	00
8	20	20	20	20
9	00	00	00	00
A	80	B0	30	30
B	60	60	60	31
C	86	86	86	11
D	00	00	00	00
E	44	44	5C	5C
F	C0	C0	C0	C0

Bit Switch	K57	K55	K53	K52
10	38	38	38	3B
11	02	02	02	02
12	80	80	80	80
13	FF	FF	FF	FF
14	C0	C0	C0	C0
15	13	13	10	10
16	E4	E4	E4	E1
17	A0	A0	A0	80
18	00	00	00	00
19	00	00	00	00
1A	00	00	00	00
1B	00	00	00	00
1C	00	00	00	00
1D	20	20	20	20
1E	00	00	00	00
1F	00	00	00	00

– Factory Settings of Bit SW for Germany –

Bit Switch	K57	K55	K53	K52
0	02	02	02	02
1	40	40	40	40
2	A0	A0	A0	A0
3	0A	0A	0A	0A
4	96	86	86	86
5	00	00	00	00
6	D7	D7	D7	D7
7	00	00	00	00
8	22	22	22	22
9	00	00	00	00
A	B0	B0	30	30
B	71	71	71	71
C	86	86	86	11
D	00	00	00	00
E	44	44	5C	5C
F	C0	C0	C0	C0

Bit Switch	K57	K55	K53	K52
10	20	20	20	23
11	01	01	01	01
12	80	80	80	80
13	FF	FF	FF	FF
14	C0	C0	C0	C0
15	13	13	10	10
16	E4	E4	E4	E1
17	A0	A0	A0	80
18	00	00	00	00
19	00	00	00	00
1A	80	00	00	00
1B	00	00	00	00
1C	00	00	00	00
1D	20	20	20	20
1E	01	00	00	00
1F	00	00	00	00

– Factory Settings of Bit SW for Italy –

Bit Switch	K57	K55	K53	K52
0	02	02	02	02
1	40	40	40	40
2	00	00	00	00
3	0A	0A	0A	0A
4	96	86	86	86
5	00	00	00	00
6	C0	C0	C0	C2
7	00	00	00	00
8	20	20	20	20
9	00	00	00	00
A	80	B0	30	30
B	70	70	70	71
C	86	86	86	11
D	00	00	00	00
E	44	44	5C	5C
F	C0	C0	C0	C0

Bit Switch	K57	K55	K53	K52
10	38	38	38	3B
11	03	03	03	03
12	80	80	80	80
13	FF	FF	FF	FF
14	C0	C0	C0	C0
15	13	13	10	10
16	E4	E4	E4	E1
17	A0	A0	A0	80
18	00	00	00	00
19	00	00	00	00
1A	00	00	00	00
1B	00	00	00	00
1C	00	00	00	00
1D	20	20	20	20
1E	00	00	00	00
1F	00	00	00	00

- Factory Settings of Bit SW for the Universal Version –

Bit Switch	K57	K55	K53	K52
0	02	02	02	02
1	40	40	40	40
2	00	00	00	00
3	0A	0A	0A	0A
4	96	86	86	86
5	00	00	00	00
6	C0	C0	C0	C2
7	00	00	00	00
8	20	20	20	20
9	00	00	00	00
A	80	B0	30	30
B	60	60	60	31
C	86	86	86	11
D	00	00	00	00
E	44	44	5C	5C
F	C0	C0	C0	C0

Bit Switch	K57	K55	K53	K52
10	38	38	38	3B
11	02	02	02	02
12	80	80	80	80
13	FF	FF	FF	FF
14	C0	C0	C0	C0
15	13	13	10	10
16	E4	E4	E4	E1
17	A0	A0	A0	80
18	00	00	00	00
19	00	00	00	00
1A	00	00	00	00
1B	00	00	00	00
1C	00	00	00	00
1D	20	20	20	20
1E	00	00	00	00
1F	00	00	00	00

– Factory Settings of Bit SW for Asia –

Bit Switch	K57	K55	K53	K52
0	00	00	00	00
1	44	44	44	44
2	00	00	00	00
3	06	06	06	06
4	A4	84	84	84
5	00	00	00	00
6	C0	C0	C0	C2
7	00	00	00	00
8	00	00	00	00
9	00	00	00	00
A	80	B0	30	30
B	60	60	60	31
C	44	44	44	11
D	11	11	11	11
E	01	01	19	59
F	C0	C0	C0	C0

Bit Switch	K57	K55	K53	K52
10	38	38	38	3B
11	12	12	12	12
12	80	80	80	80
13	FF	FF	FF	FF
14	C0	C0	C0	C0
15	13	13	10	10
16	E4	E4	E4	E1
17	A0	A0	A0	80
18	08	00	00	00
19	00	00	00	00
1A	00	00	00	00
1B	00	00	00	00
1C	00	00	00	00
1D	20	20	20	20
1E	00	00	00	00
1F	00	00	00	00

APPENDIX B. TEST POINTS, JUMPERS AND VRS

1. FPD

TP1 – Ground for + 24V supply

2. SBU

TP 1 - XVIDEO

VR 1 – White level voltage adjustment

3. MBU

SW1 - Battery switch

JP1, 2 – ROM addressing

	K52	K53/5/7
JP1	Open	Shorted
JP2	Shorted	Open

4. MIF

JP2 → 5 – Not used.

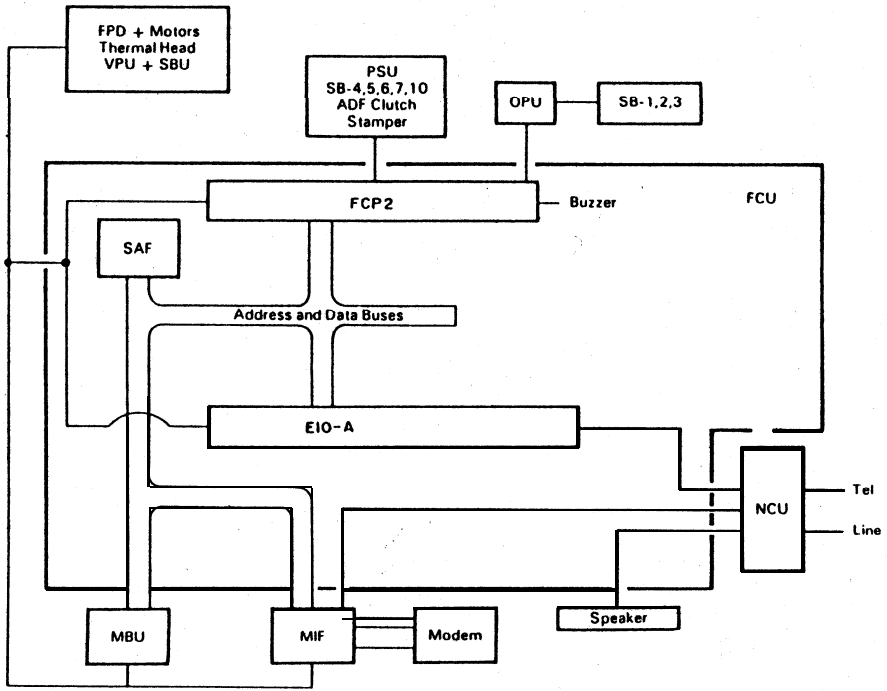
5. **NCU**

JP14 **has been added to the previous** K50 **series NCU'S excluding the** UK **version for use outside the UK. – To meet various PTT requirement.**

APPENDIX C. BLOCK DIAGRAMS

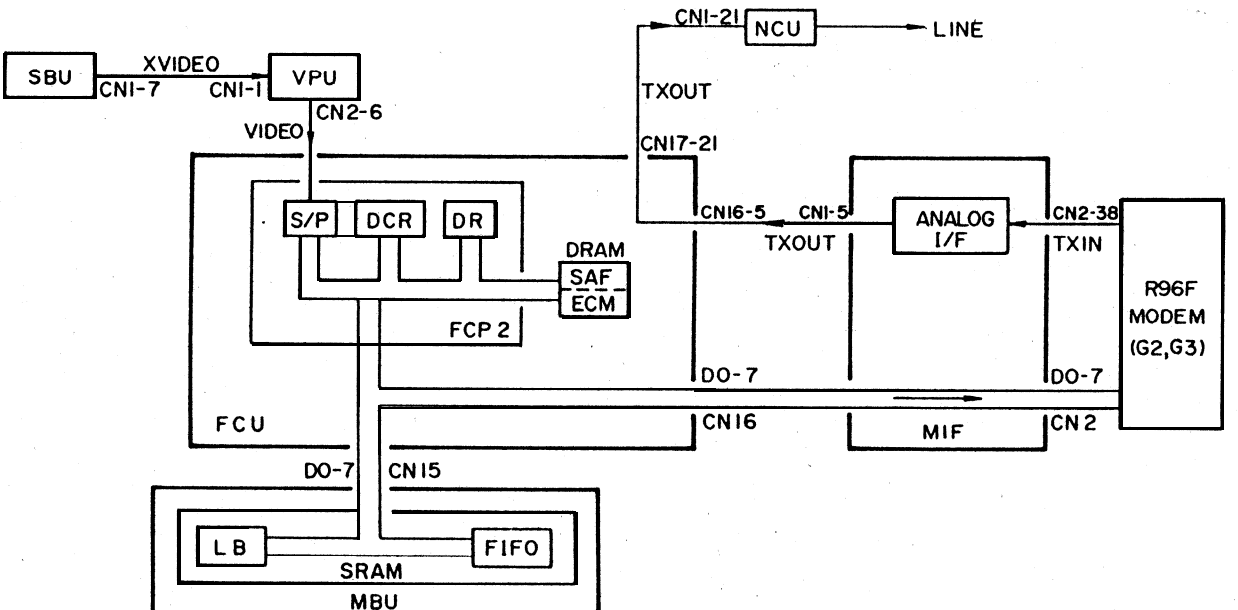
1. System Control

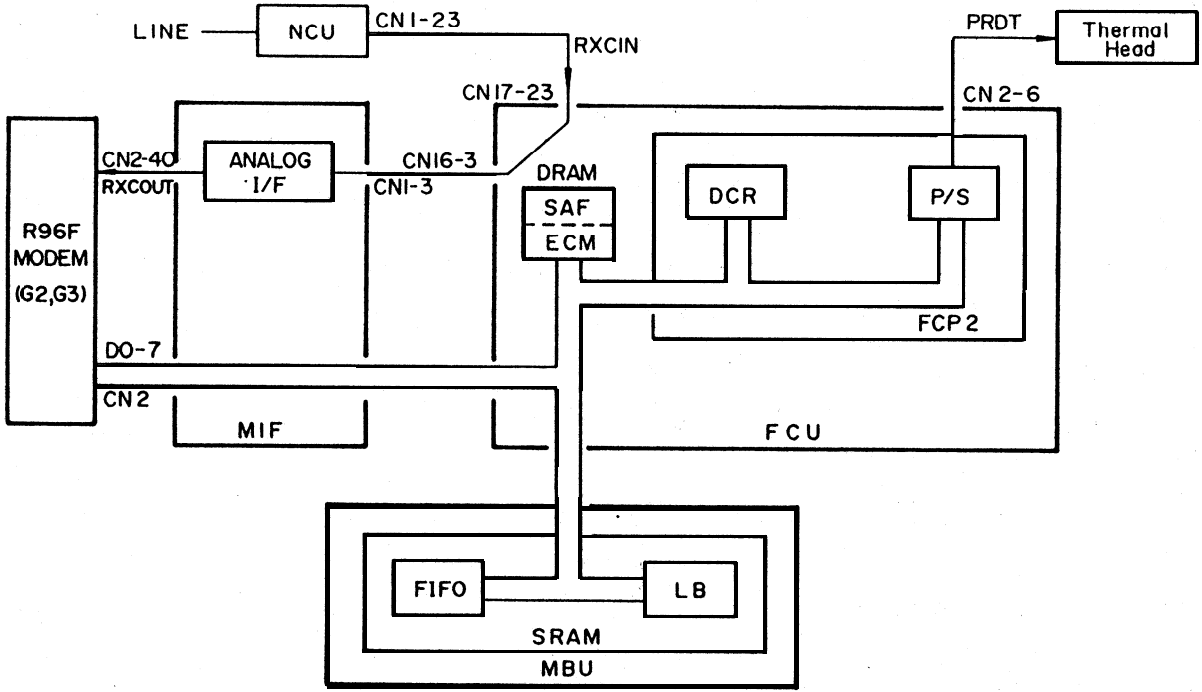
- Overview -

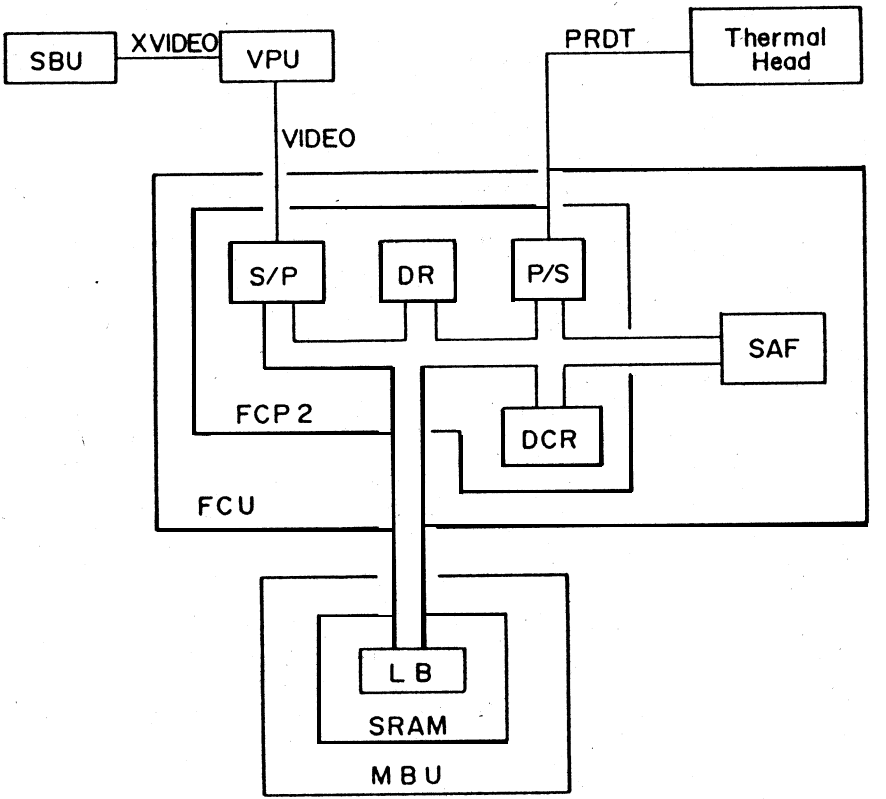


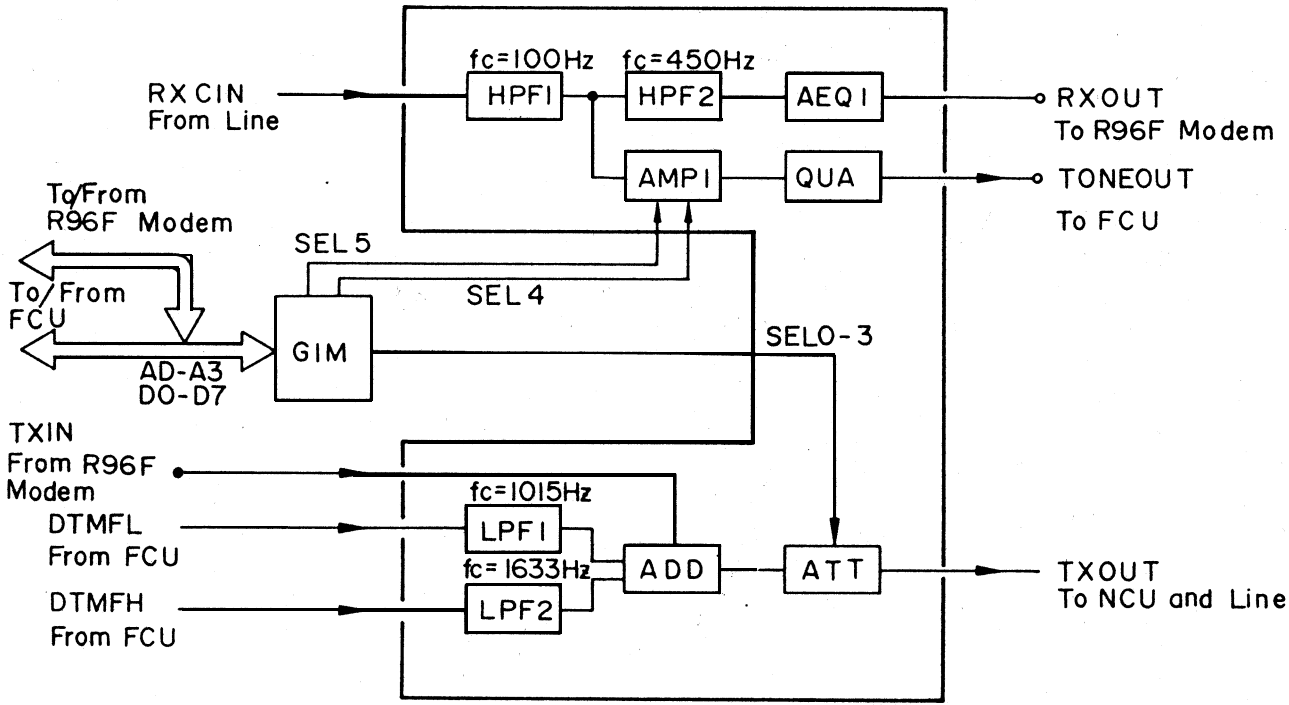
2. Video Data Flow

– Transmission –




LINE
NCU
CN1-23
RXCIN
PRDT
Thermal Head
CN17-23
CN2-6
CN2-40
RXCOUT
ANALOG I/F
CN16-3
CN1-3
DRAM
SAF
ECM
DCR
P/S
R96F MODEM (G2,G3)
FCP2
D0-7
CN2
MIF
FCU
FIFO
LB
SRAM
MBU


SBU
XVIDEO
VPU
PRDT
Thermal Head
VIDEO
S/P
DR
P/S
SAF
FCP 2
DCR
FCU
L B
SRAM
M B U


RX CIN
From Line
fc=100Hz
HPF1
fc=450Hz
HPF2
AEQ1
RXOUT
To R96F Modem
AMP1
QUA
TONEOUT
To FCU
To/From
R96F Modem
SEL5
SEL4
To/From
FCU
GIM
SEL0-3
AD-A3
D0-D7
TXIN
From R96F
Modem
fc=1015Hz
DTMFL
From FCU
LPF1
fc=1633Hz
ADD
ATT
TXOUT
To NCU and Line
DTMFH
From FCU
LPF2

APPENDIX D. ADDITIONAL GLOSSARY

CTC – Continue to Correct: A protocol signal sent by the transmitter to indicate that it will continue to correct the current block of data; only used with ECM.

CTR - Response to CTC: The receiver transmits this to acknowledge CTC.

DR - Data Reducer: A circuit that reduces data in the main scan direction

ECM - Error Correction Mode: An extension to G3 protocol, recently introduced by CCITT, to enable more effective correction of errors in video data that were caused by bad telephone lines

EOR - End of Retransmission: The transmitter uses this protocol signal to indicate that it will stop correcting the current block of data and go on to the next one; only used with ECM.

ERR - Response to EOR: The receiver sends this to acknowledge EOR.

FCD – Facsimile Coded Data: The transmitter sends video data in FCD frames when using ECM.

LB – Line Buffer: An area of memory where lines of video data are temporarily held before being passed onto the next process.
This helps to ensure a smooth flow of data

PPS – Partial Page Signal: The transmitting terminal uses this protocol signal to indicate that it has just completed sending a data block; only used with ECM.

PPR – Partial Page Request: The receive uses this protocol signal to indicate that the data block just received contained some error frames and asks for retransmission of those frames; only used with ECM.

RCP - Return to Control' for Partial Page; The transmitter uses this protocol signal as an end of block signal; only used with ECM.

RNR – **Receive Not Ready: The receiver uses this protocol signal to indicate that it is not ready to receive the next data block; only used with ECM.**

RR - **Receive Ready; The transmitter uses this protocol signal to ask the remote terminal whether it is ready to receive a data block; only used with** ECM.

SRAM - **Static Random . Access Memory: An LSI used for storing information. SRAMs can be backed up by a battery**

APPENDIX E. FEATURES

Equipment	K52	K53	K55	K57
Built-in handset	x	x	x	x
Connection for external telephone set	o	o	o	o
Telephone set	X	X	x	x
ADF - (capacity)	10	10	30	30
Monitor speaker	X	o	o	o
SAF memory	x	x	x	o
Remaining memory indicator	x	x	x	o
Document width detection	x	x	0	o
B4/A3 scanner	x	x	o	0
A4/B4 printer	x	x	0	o
Stamper	x	x	o*	0*

*: Asia only

Video Processing	K52	K53	K55	K57
Contrast (Light, Normal, Dark)	o	o	o	o
Resolution (Standard, Detail)	o	o	o	o
Halftone	x	o	o	o
MTF (selectable by service)	o	o	o	o
Reduction – A3 to B4	x	x	o	o
– A3 to A4	x	x	o	o
– B4 to A4	x	x	o	o
Smoothing (reception only)	o	o	o	o

Note: Halftone and MTF cannot both be used in the same transmission.

Communication Features - Auto	K52	K53	K55	K57
Transmission standby	x	o	o	o
Redialing	x	o	o	o
G2, G3 autocompatibility	o	o	o	o
Automatic fallback	o	o	o	o
G1 autocompatibility	X	X	X	X
Confidential reception	x	x	x	o
Substitute reception	x	x	x	o
Page retransmission	x	x	x	o

Communication Features – Selectable by User	K52	K53	K55	K57
Shared or dedicated line (Fax/Tel)	o	o	o	o
Auto or manual reception (Fax/Tel)	o	0	0	0
Auto dialing (Pulse or DTMF)	x	o	o	o
On-hook dial	x	x	x	x
Speed Dial (up to 90 codes)	x	o	o	o
Quick Dial – up to 25 keys	x	o	o	o
— up to 25 single addresses	x	o	o	o
– keystroke programs	x	5	10	10
Groups – up to 7	x	o	o	o
- up to 10 full tel. nos. in all groups	x	o	o	o
Alternative destination	x	o	o	o
Department code	x	o	o	o
Batch-numbering	x	o	o	o

Communication Features – Selectable by User	K52	K53	K55	K57
Turnaround polling	o	o	o	o
EFC disabling option	x	X	X	X
Auto-reduction over-ride option	x	x	o	o
Resolution stepdown over-ride option	x	x	x	x
Immediate redial	x	o	o	o
Auto= answer delay time	x	x	x	x
Hold	x	x	x	x
Voice request	o	o	o	o
Voice Message (with battery backup)	x	x	x	x

Communication Features – Selectable by Service	K 5 2	K53	K55	K57
Page retransmission (up to three times)	x	x	x	o
Closed network	o	o	o	o
MV1200 compatibility	o	o	o	o
ECM	o	o	o	o
Auto-answer delay time	x	x	x	x
Well log (14m)	o	o	o	o
Protection against wrong connections	x	o	o	o
EFC	o	o	o	o
PSTN access through PABX	x	o	o	o
Polling ID code security	x	x	x	x

Special Communication Functions	K52	K53	K55	K57
Transmission from memory	x	x	x	o
— immediate and send later	X	X	X	o
— up to 100 addresses/file	x	x	x	o
— up to 99 files	x	x	x	o
- up to 300 addresses over all files (see Note on p. E-15)	x	x	x	o
- use of broadcaster's speed dial codes etc.	x	o	o	o
Confidential Transmission	o	o	o	o
- immediate	o	o	o	o
- send later, broadcasting	x	x	x	x
- remote password override (to K57/R610/R830/FAX1000L)	x	o	o	o
Transfer Request	x	o	o	o
— one broadcaster, 30 end receivers	x	o	o	o
— time designatable	x	x	x	x

Special Communication Functions	K52	K53	K55	K57
Send Later (one address - document stored in ADF)	x	o	o	o
Polling Transmission	o	o	o	o
– free/secured option	o	o	o	o
- stored ID override	x	o	o	o
– from memory (erased after one polling)	x	x	x	x
Pelting Reception	o	o	o	o
– free/secured option	o	o	o	o
- stored ID override	x	o	o	o
- poll later – max no. of files	x	4	8	8
- max no. of addresses/file	x	70	100	100
– up to 300 addresses overall (see Note on p. E-15)	x	o	o	o

Other Features	K52	K53	K55	K57
Multicopy mode (up to 30 copies per original)	x	x	x	o *
Convenience keys	x	o	o	o
Remote Fax/Tel change	x	x	x	x
Printing the contents of a memory file	x	x	x	o

* Service function in Europe

Reports – Automatic	K52	K53	K55	K57
TCR (optional)	o	o	o	o
Transmission Report (optional)	0	0	0	0
Error Report (optional)	o	o	o	o
Transfer Result Report	x	o	o	o
Polling File List (optional)	X	o	o	o
Memory Report (optional)	x	x	x	o
Power Failure Report	x	x	x	o
Memory Transmission Report (optional)	x	x	x	o
Telephone List	x	x	x	x

Reports – User	K52	K53	K55	K57
TCR	o	o	o	o
Telephone List (includes Group List)	X	0	o	o
Polling File List	X	o	o	o
SAF File List	X	X	X	o
Program List	x	o	o	o

Reports – Service	K52	K53	K55	K57
Auto Service Call	X	X	X	X
System Report	o	o	o	o
Memory Dump	o	o	o	o
Service Report	o	o	o	o

Programming – User	K52	K53	K55	K57
Clock	o	o	o	o
Fax/Tel setting	o	o	o	o
Communicated page counter display	o	o	o	o
Sheet feed counter display	x	o	o	o
Batch-number enabling	X	0	0	0
Department code enabling	X	o	o	o
Speaker volume adjustment	x	o	o	o
Voice Message recording	x	x	x	x
Voice Message playback	x	x	x	x
Voice Message enabling	x	x	x	x
Transmission Report enabling	o	o	o	o
Quick Dial	x	o	o	o
Groups	x	o	o	o
Polling ID code	o	o	o	o

Programming - User	K52	K53	K55	K57
RTI	0	0	o	o
TTI	o	o	o	o
CSI (for serviceman in Europe)	o *	o *	O *	O *
Polling file clearance	x	o	o	o
Memory file clearance	x	x	x	o
Own telephone number	x	o	o	o
Telephone line type (for serviceman in Europe)	x	o *	O *	O *
TTI disabling	o	o	O	O
Stamper enabling	x	x	O *	O *
Password	x	x	X	O
Keystroke programs	x	o	O	o

*: Asia only

Programming - Service	K52	K53	K55	K57
Dedicated transmission parameters	x	o	o	o
Bit switches	o	o	o	o
RAM rewriting – local	o	o	o	o
RAM rewriting - remote (from this machine)	x	X	X	X
Error code display	o	o	o	o
CCITT and Maker codes	o	o	o	o
NCU parameters	o	o	o	o
Thermal head parameters	o	o	o	o
Maximum address limitation	o *	o *	o *	o*

*: Europe only

System Tests	K52	K53	K55	K57
Modem	o	o	o	o
DTMF tone	X	o	o	o
Operation panel	o	o	o	o
LED array lighting	o	o	o	o
Sensor initialization	o	o	o	o
Back-to-back test	o	o	o	o
Printer test patterns	o	o	o	o
ADF and cutter mechanism test	o	o	o	o

Note: In the K57, the total number of addresses stored in the machine forpolling reception and memory transmission, when added together, cannot exceed 300.