



**FACSIMILE EQUIPMENT  
SERVICE MANUAL**

**MODEL: FAX-270MC/290MC/520DT/520MC  
MFC370MC/390MC**

#### NOTE

This Service Manual presents specifications, theory of operation, and maintenance information which pertain exclusively to the FAX-270MC/290MC/520DT/520MC/MFC370MC/390MC. For additional descriptions common to both FAX-270MC/290MC/520DT/520MC/MFC370MC/390MC and FAX170/190/510/HOME FAX, please refer to the FAX170/190/510/HOME FAX Service Manual.

# **CHAPTER I.**

## **GENERAL DESCRIPTION**

## 2. SPECIFICATIONS

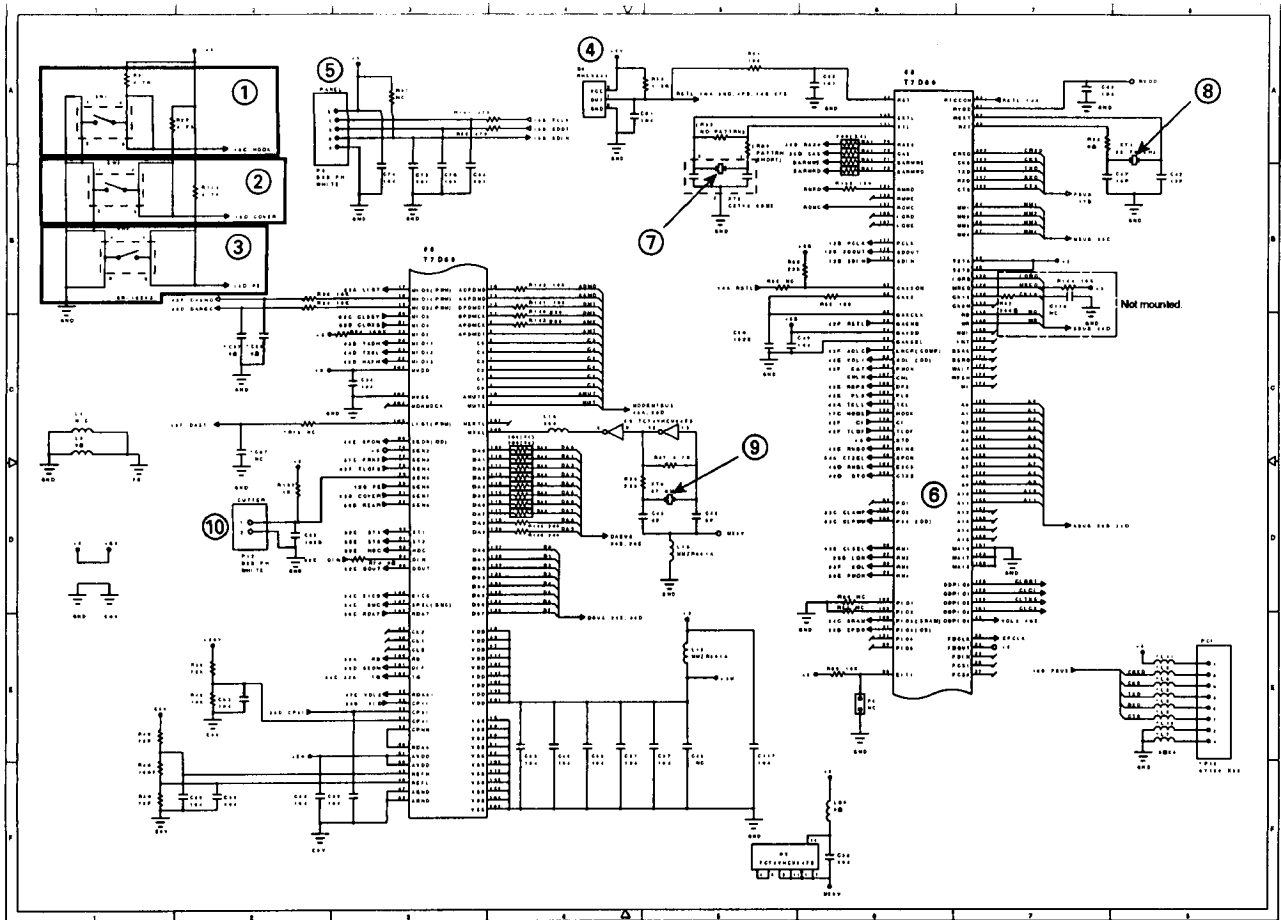
Model	FAX-270MC/290MC	MFC370MC	MFC390MC
Color	Black (1395)	White (1138)	White (1138)
Modem Speed	14400 bps		
Coding Method	MH		
Transmission Speed	9 sec.		
CCITT Group	G3		
Input/Output Width	Max. 216/216 mm		
Hold Key	Yes		
Automatic Cutter	Yes		
ADF Capacity	10 pages		
Anti-curl System	Yes		
Roll Paper Size (Standard thermal/Therma PLUS)	98' (1" Core)		
LCD Size	16 x 1		
On-screen Programming	Yes		
Memory Capacity	512 KB		
Super Fine	Yes		
Smoothing	Yes		
Gray Scale (levels)	64 by Dithered Method		
One-touch Dialing	5 locations		
Speed Dialing	50		
Telephone Index	Yes		
Super Telephone Index	No		
Speaker Phone	Yes		
Fax/Tel Switch	Yes		
TAD Interface	Yes		
Enlargement/Reduction	No	Same as left	Same as left
Enhanced Remote Activation	Yes		
Distinctive Ringing (FAX Ability)	Yes		
Next-fax Reservation	Yes		
Help	Yes, Simple		
Caller ID (Caller Display)	Yes		
Automatic Redialing	Yes		
Auto Reduction	No		
Multi-resolution Transmission	Yes		
Polling	Yes (No secure polling)		
Delayed Transmission	Yes, 3 timers		
Delayed Polling	Yes		
Coverpage	Yes		
Call Reservation	Yes		
Call-back Message	Yes		
Activity Report	Yes		
Auto CNG Detection (New)	Yes		
Transmission Verification Report	Yes		
ECM	Yes		
Broadcasting	Yes		
Quick Scanning	Yes		
Out-of-paper Reception	Yes, 20 pages		
Multi Copy	Yes		
Multi Transmission	No		
PCI (Missing link)	Yes	Yes, Included	Yes, Included w/OCR
Confidential Mailbox	No		
Fax Forwarding	Yes		
Fax-on-demand	No		
Fax Retrieval	Yes		
ICM Recording Time	15 minutes		
Memo/2-way Recording	Yes		
Page Memory	Yes, 20 pages		
Paging	Yes	Same as left	Same as left
Personal Fax Mail box (5)	Yes		
Personal Voice Mail Box (5)	Yes		
Remote Control	Yes		
TAD Type	DSP type		
Toll Saver	Yes		
Voice-on-demand	Yes		

Model	FAX-520DT/520MC
Color	Black (1395)/White (1397)*
Modem Speed	14400 bps
Coding Method	MH
Transmission Speed	9 sec.
CCITT Group	G3
Input/Output Width	Max. 216/216
Hold Key	Yes
Automatic Cutter	Yes
ADF Capacity	10 pages
Anti-curl System	Yes
Roll Paper Size (Standard thermal/Therma PLUS)	30 m (1" Core)
LCD Size	16 x 1
On-screen Programming	Yes
Memory Capacity	512 KB
Super Fine	Yes
Smoothing	Yes
Gray Scale (levels)	64 by Dithered Method
One-touch Dialing	5
Speed Dialing	50 locations
Telephone Index	Yes
Super Telephone Index	Yes, 50 locations
Speaker Phone	Yes (only for FAX-520MC)
Fax/Tel Switch	Yes
TAD Interface	Yes
Enlargement/Reduction	No
Enhanced Remote Activation	Yes
Distinctive Ringing (FaxAbility)	Yes (only for FAX-520MC)
Next-fax Reservation	Yes
Help	Yes, Simple
Caller ID (Caller Display)	Yes for UK/NLD/SWE/NZ
Automatic Redialing	Yes
Auto Reduction	No
Multi-resolution Transmission	Yes
Polling	Yes (w/ secure polling)
Delayed Transmission	Yes, 3 timers
Delayed Polling	Yes
Coverpage	Yes
Call Reservation	Yes
Call-back Message	Yes
Activity Report	Yes
Auto CNG Detection (New)	Yes
Transmission Verification Report	Yes
ECM	Yes
Broadcasting	Yes
Quick Scanning	Yes
Out-of-paper Reception	Yes, 20 pages
Multi Copy	Yes
Multi Transmission	No
PCI (Missing link)	Yes
Confidential Mailbox	No
Power Failure Dialing	Yes for UK/BEL
Fax Forwarding	Yes
Fax-on-demand	No
Fax Retrieval	Yes
ICM Recording Time	15 minutes
Memo/2-way Recording	Yes
Page Memory	Yes, 20 pages
Paging	Yes
Personal Fax Mail box (5)	Yes
Personal Voice Mail Box (5)	Yes
Remote Control	Yes
TAD Type	DSP type
Toll Saver	Yes
Voice-on-demand	Yes

\* FAX-520DT: Black (1395)  
FAX-520MC: White (1397)

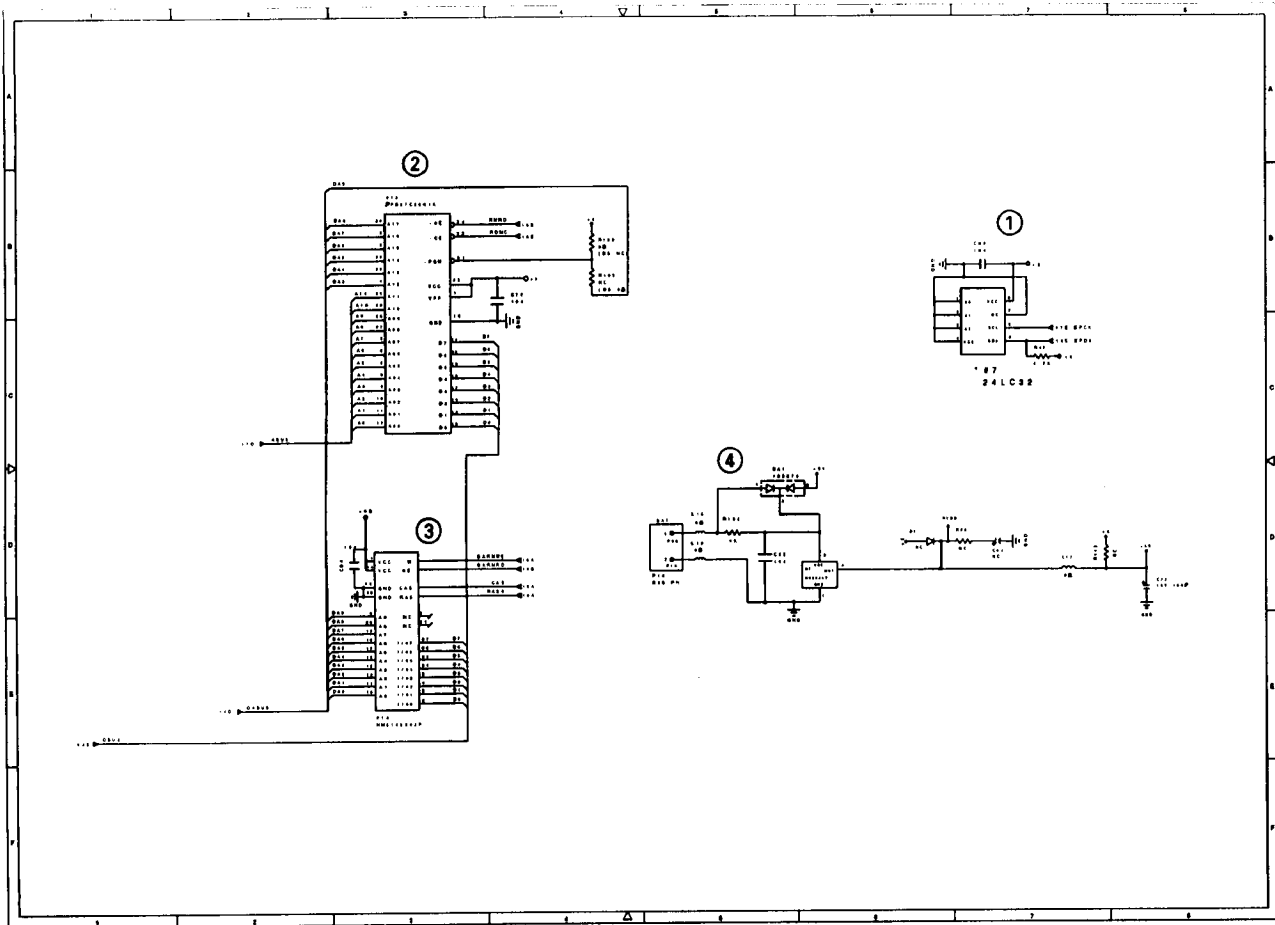
# **CHAPTER III.**

## **THEORY OF OPERATION**



**Main PCB Circuit Diagram 1/5**

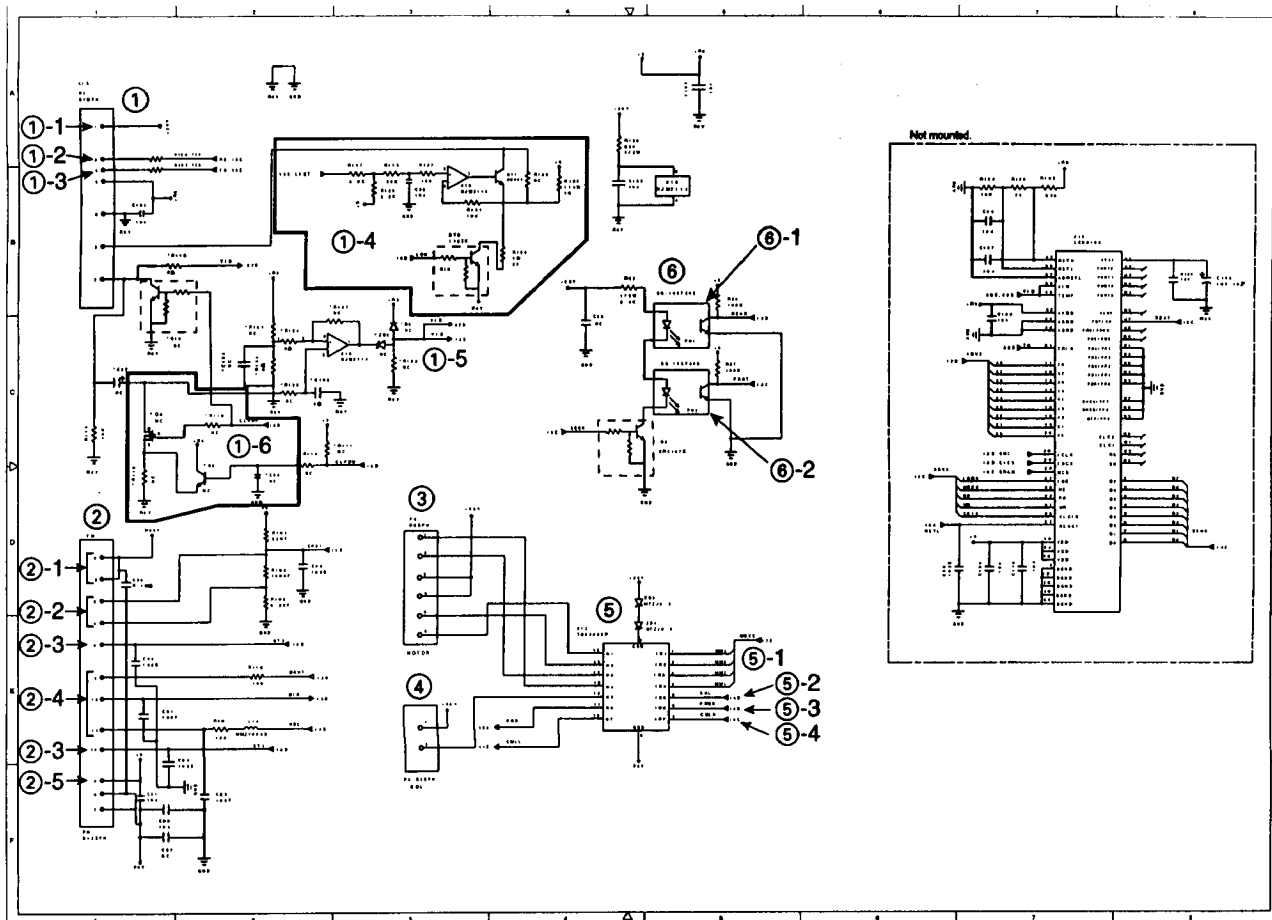
- ① SW1, hook switch sensor (microswitch)
- ② SW2, cover switch sensor (microswitch)
- ③ SW3, paper empty sensor (microswitch)
- ④ Reset IC which turns on at the powering-on sequence and at any of the reset operations.
- ⑤ Connector for the control panel
- ⑥ FAX engine (ASIC) which integrates a CPU, digital portion of a MODEM and gate array for managing the I/Os, memories, and drivers.
- ⑦ XT2, oscillator which oscillates at 16 MHz for the CPU.
- ⑧ XT1, oscillator which oscillates at 32.768 kHz for the calendar clock.
- ⑨ XT3, oscillator which oscillates at 57.6 MHz for the MODEM.
- ⑩ Connector for the cutter HP sensor



**Main PCB Circuit Diagram 2/5**

- ① E<sup>2</sup>PROM (16k x 1 bit)
- ② ROM (256k x 8 bits. Note that the qualification machines for demonstration have a 2-megabit ROM.)
- ③ DRAM (512k x 8 bits)
- ④ Backup circuit for the calendar clock of the control panel and DRAM.

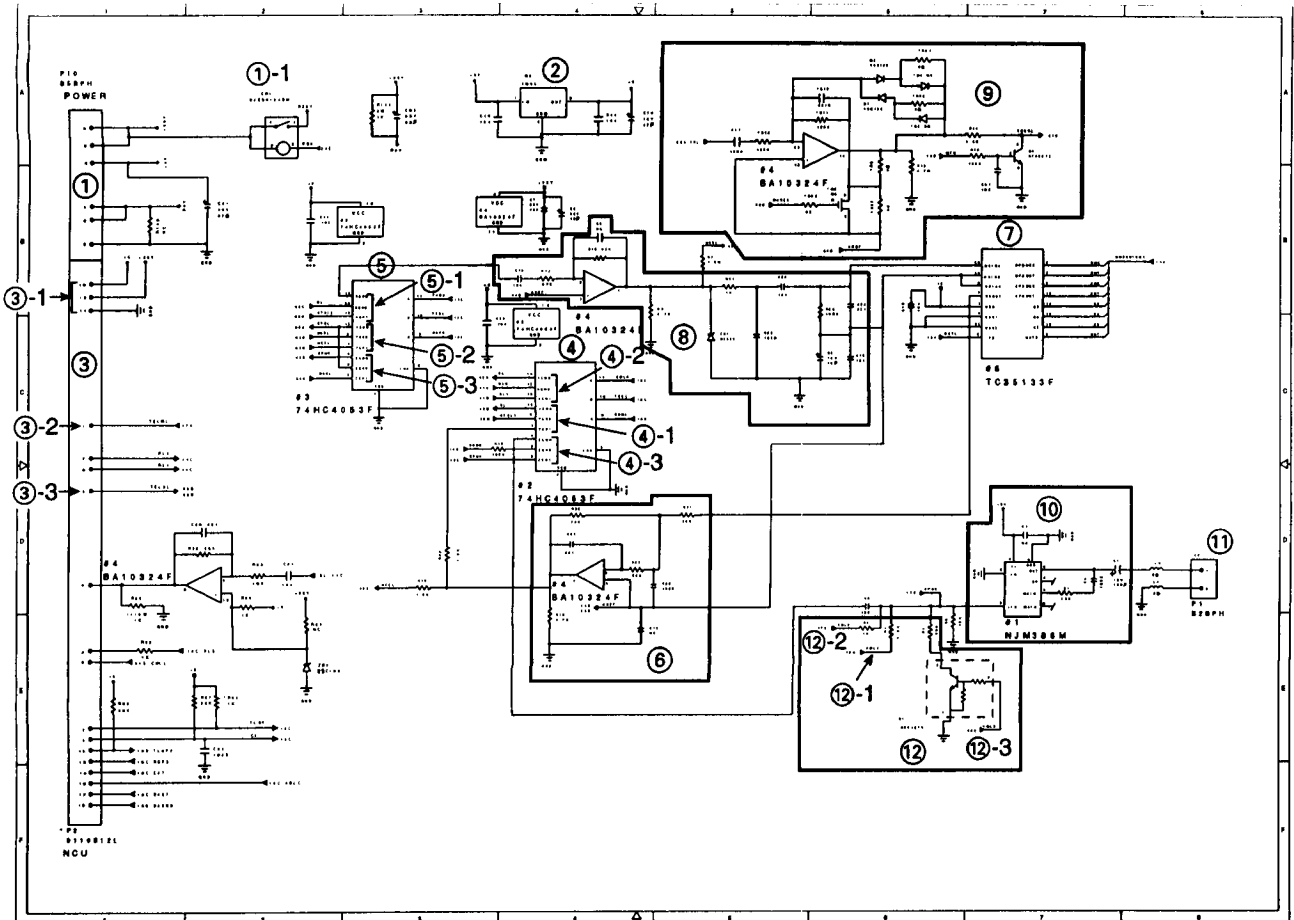




**Main PCB Circuit Diagram 3/5**

- ① Connector for the CIS
  - ①-1: Power for the CIS LED array
  - ①-2: Clock output
  - ①-3: Trigger signal output. One shot of this signal triggers a line of scan.
  - ①-4: LED control signal output circuit which controls the intensity of the CIS LED array.
  - ①-5: Input of video data (VID) to the FAX engine
  - ①-6: Clamp circuit that gives the bias level to the amplifier of the VID input circuit according to the CLAMP and CLPWM signals issued by the CPU (that monitors the current video data input) for compensating the DC component of video signals for the next scan line
- ② Connector for the thermal recording head
  - ②-1: Power 26V for the thermal recording head
  - ②-2: Thermister signals which are normalized by the resistor network and fed to the FAX engine
  - ②-3: Strobe signals
  - ②-4: Data signals
  - ②-5: Power 5V for the logic circuit of the thermal recording head
- ③ Connector for the motor
- ④ Connector for the solenoid (that switches the power transmission)

- ⑤ Transistor array which consists of seven transistors
  - ⑤-1: Transistors that control the rotation direction of the motor according to the MM4 through MM1 signals.
  - ⑤-2: Transistor that turns on and off the solenoid.  
The combination of the solenoid state and the motor rotation direction determines to which the motor torque should be transmitted, the cutter, the document feeding mechanism, or the paper feeding mechanism.
  - ⑤-3: Transistor that turns on and off the CR1 relay for switching on and off the +26V power source to the thermal recording head.
  - ⑤-4: Transistor that turns on and off the CML relay.
- ⑥ Document front and rear sensor circuitry that is active only while the SEON signal is on.  
The LEDs for the sensors are driven by the +26V source.
  - ⑥-1: PH1, document rear sensor
  - ⑥-2: PH2, document front sensor



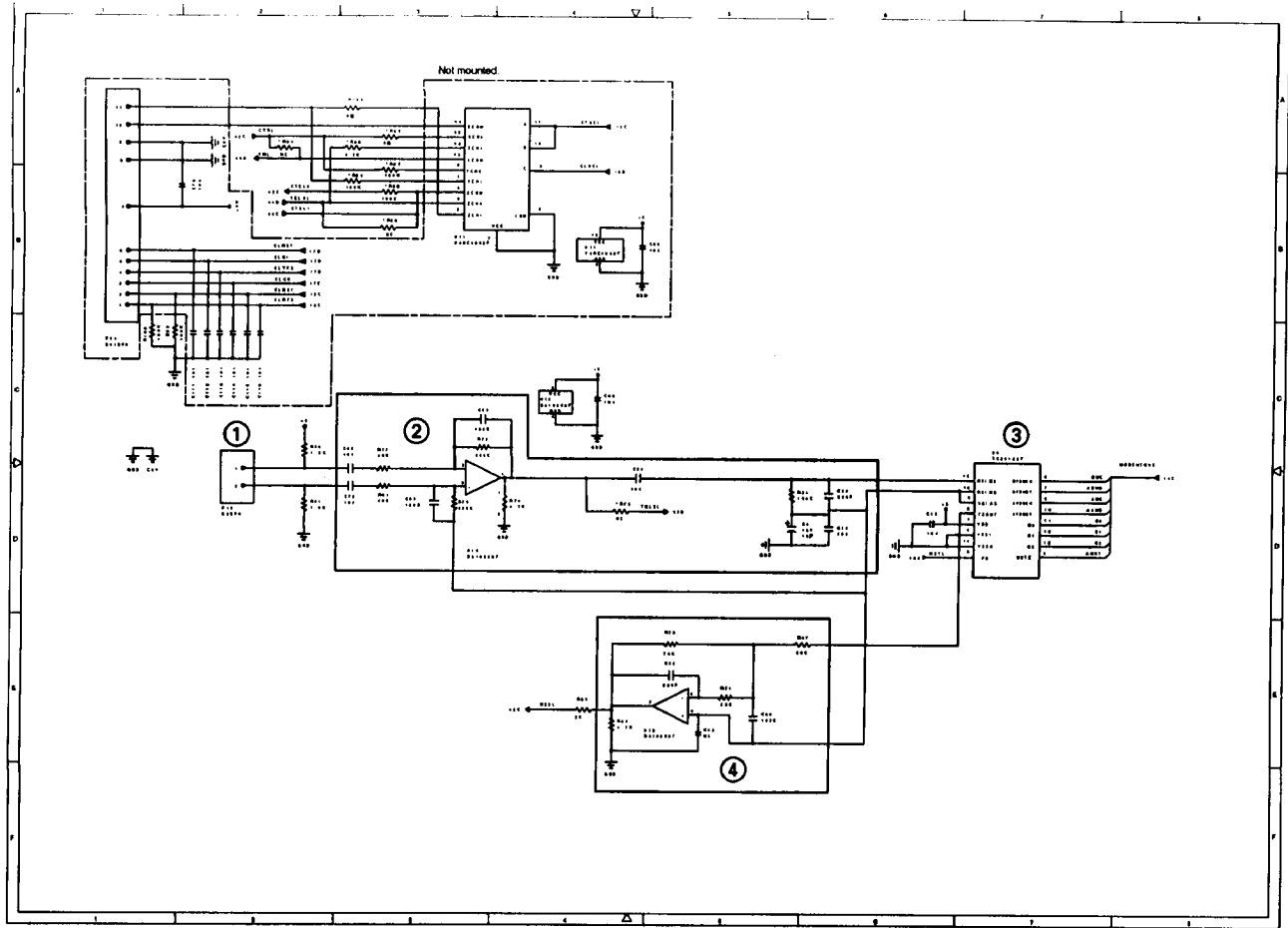
**Main PCB Circuit Diagram 4/5**

- ① Connector for the power supply PCB
  - ①-1: CR1, recording head on/off relay
- ② 3-terminal regulator which eliminates unstabilized components of the +9V source to generate stabilized 5V source.
- ③ Connector for the NCU
  - ③-1: Power for the NCU
  - ③-2: Signals to the telephone
  - ③-3: Signals from the telephone
- ④ Analog signal selectors
  - ④-1: Selects either input signals from the handset or those from the MODEM.
  - ④-2: Selects either RL1 or RL2 signals inputted from the communications network.
  - ④-3: Selects sound signals (e.g., alarm beeps, key clicks and ringer sounds) generated by the FAX engine, hands-free monitor signals, or voice playback signals.
- ⑤ Analog signal selectors
  - ⑤-1 Selects either signals gated by ④-2 or voice signals coming from the handset.
  - ⑤-2 Selects either signals gated by ④-2 or voice playback signals.
  - ⑤-3 Selects either signals gated by ④-2 or hands-free monitor signals.
- ⑥ Amplifier circuit for signals outputted from the MODEM
- ⑦ Analog front end IC which processes the analog I/O signals from/to the MODEM.
- ⑧ Amplifier & shaper circuit for signals inputted from the communications network.
- ⑨ Telephone circuit for transmitting signals.

- ⑩ Speaker amplifier circuit which amplifies sounds issued from the above analog signal selector ④-3 and feeds them to the speaker.
- ⑪ Connector for the speaker
- ⑫ Speaker volume control circuit

⑫-1: VOL1	OFF	ON	ON
⑫-2: VOL2	OFF	OFF	ON
⑫-3: VOL3	OFF	OFF	ON
Speaker volume	High	Medium	Low

(ON: Closed OFF: Opened)

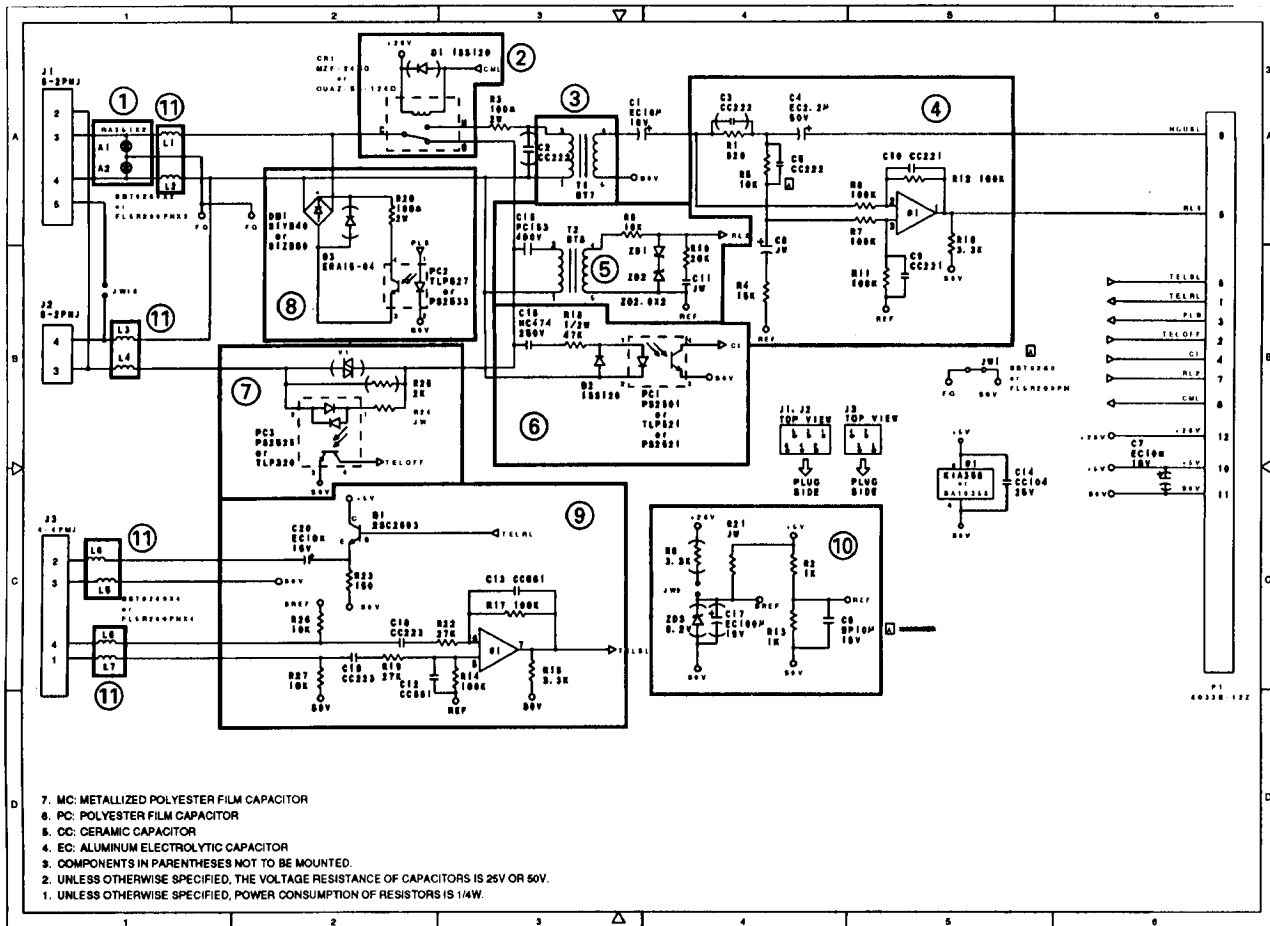


**Main PCB Circuit Diagram 5/5**

- ① Microphone connector
- ② Amplifier and shaper circuit for signals inputted from the microphone.
- ③ Analog front end IC which processes the analog I/O signals from/to the MODEM.
- ④ Amplifier circuit for signals outputted from the MODEM.

### 3.3 NCU PCB

The NCU PCB switches the communications line to telephone or built-in MODEM, under the control of the main PCB.



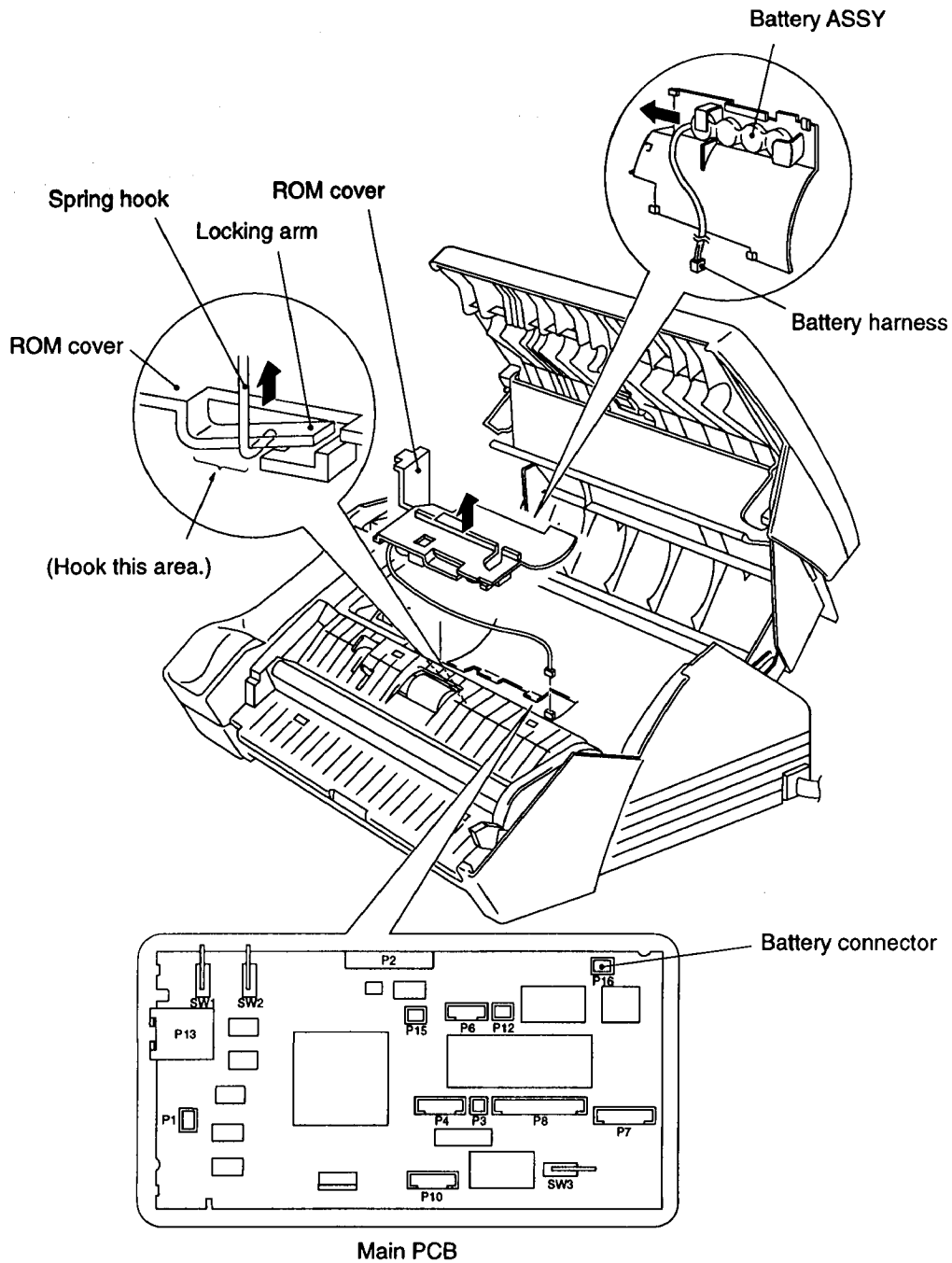
NCU PCB Circuit Diagram (U.S.A. versions)

- ① Surge absorber
- ② Line relay (CML relay)
- ③ Line transformer
- ④ Circuit related to the line transformer
- ⑤ High-impedance transformer circuit
- ⑥ Calling signal detector
- ⑦ Loop current detector
- ⑧ Dial pulse generator
- ⑨ Telephone circuit
- ⑩ Reference voltage generation circuit for the operational amplifiers in ④ and ⑨.
- ⑪ Noise filters

**CHAPTER IV.**  
**DISASSEMBLY/REASSEMBLY**  
**AND LUBRICATION**

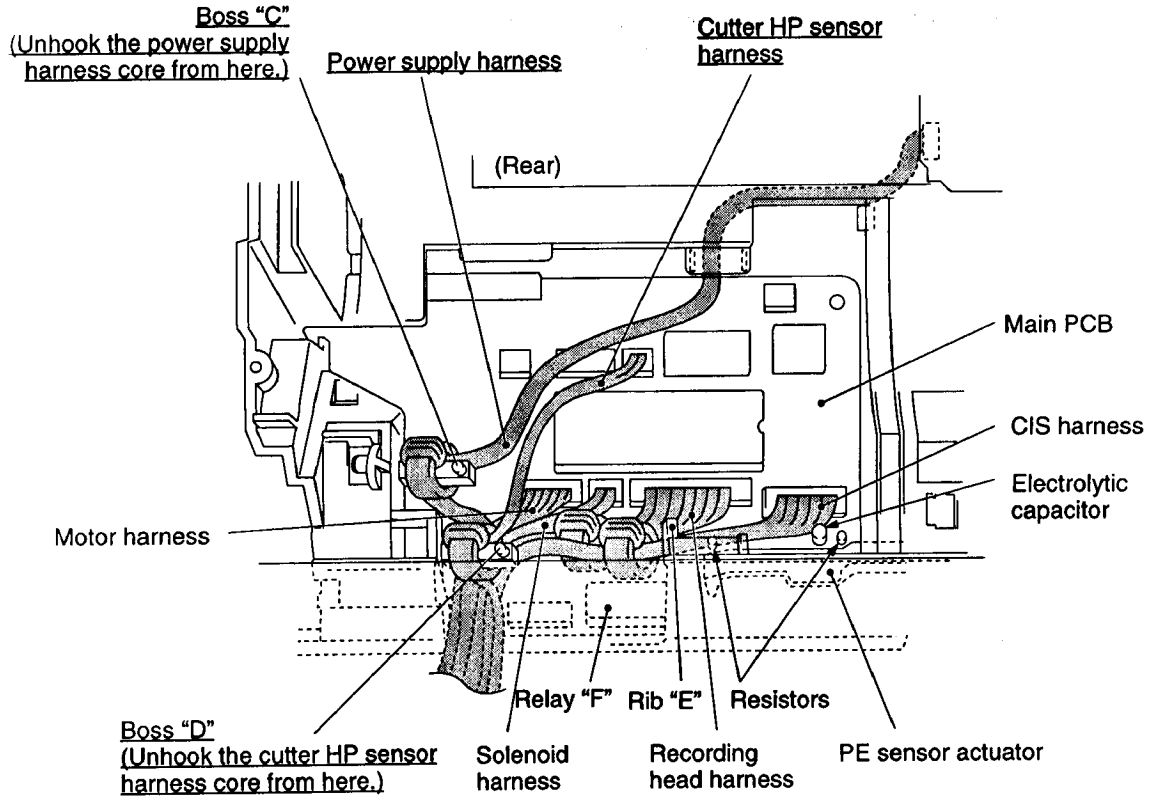
## 1.2 ROM Cover and Battery ASSY

- (1) Insert the tip of the spring hook at the center or left half of the locking arm as shown below, then lift up the hook to release and move the ROM cover to the right.
- (2) Slightly lift up the ROM cover and disconnect the battery harness from the main PCB, then take out the ROM cover together with the battery ASSY.
- (3) Remove the battery ASSY from the ROM cover.



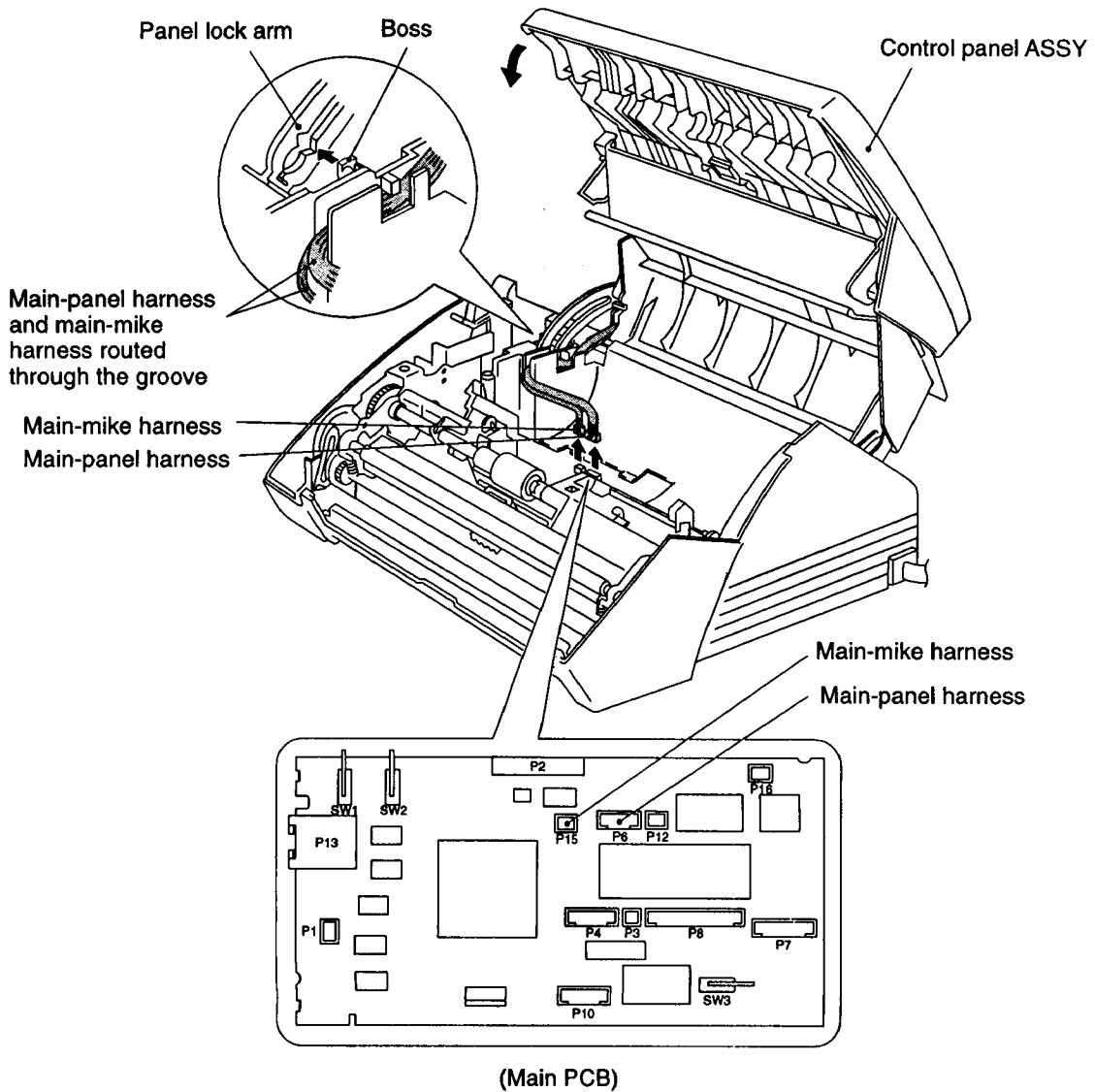


- (4) To take out the main PCB or the power supply PCB in Section 1.18, unhook the battery harness core and cutter HP sensor harness core from bosses "C" and "D," respectively, at this stage.

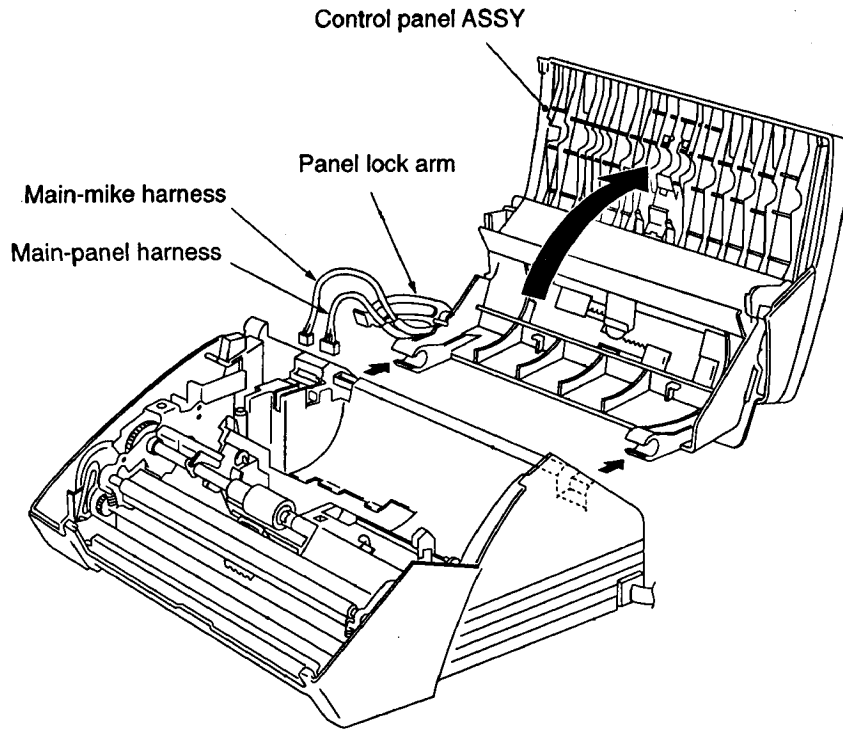


## 1.4 Control Panel ASSY

- (1) Disconnect the main-panel harness and the main-mike harness from the main PCB, and then take out those harnesses from the groove of the main frame.
- (2) Slightly bring the control panel ASSY back up towards you so that you can release the panel lock arm from the boss of the main frame. Pull out the panel lock arm to the left and fully open the control panel ASSY.



- (3) Push the control panel ASSY back and remove it.

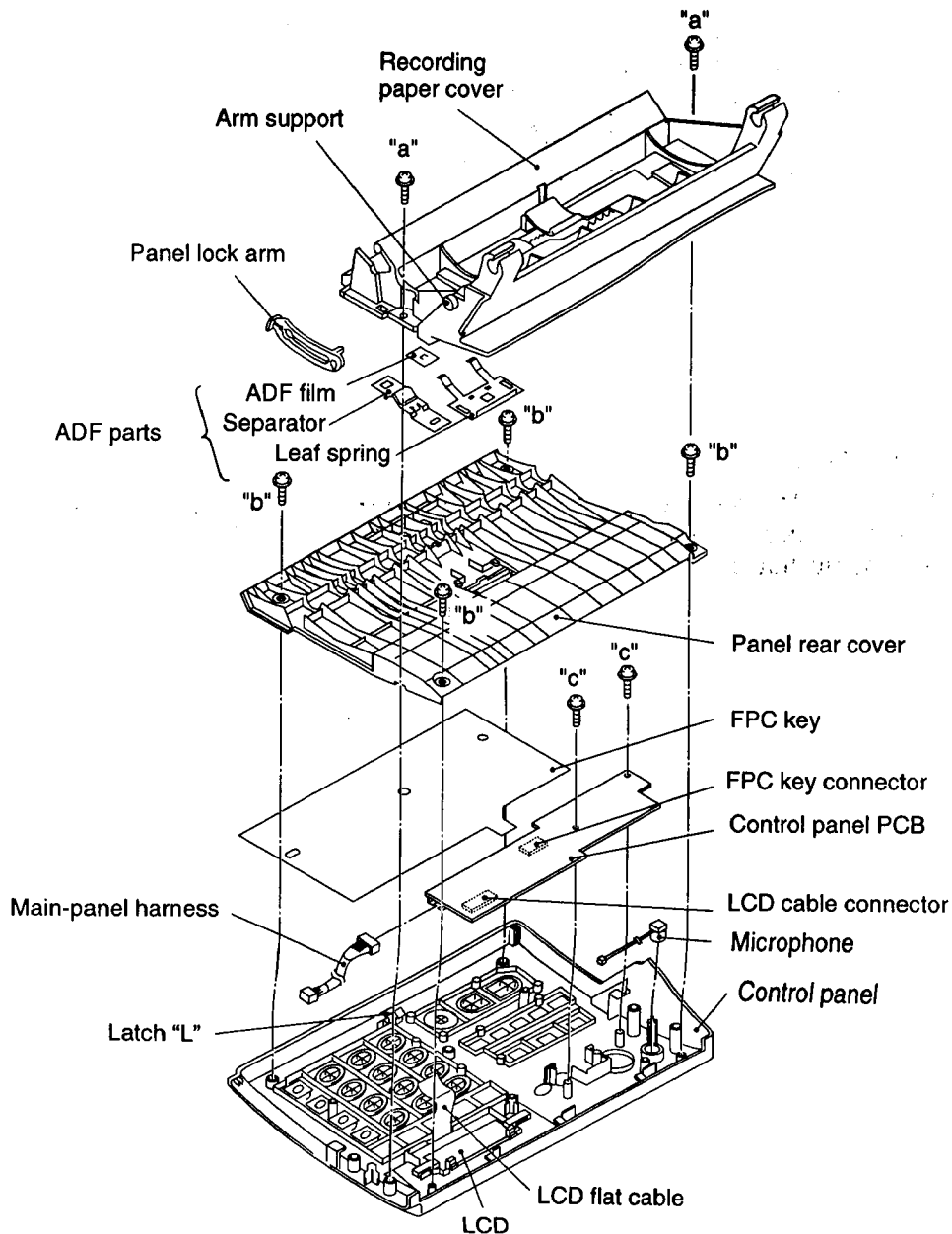


■ Reassembling Notes

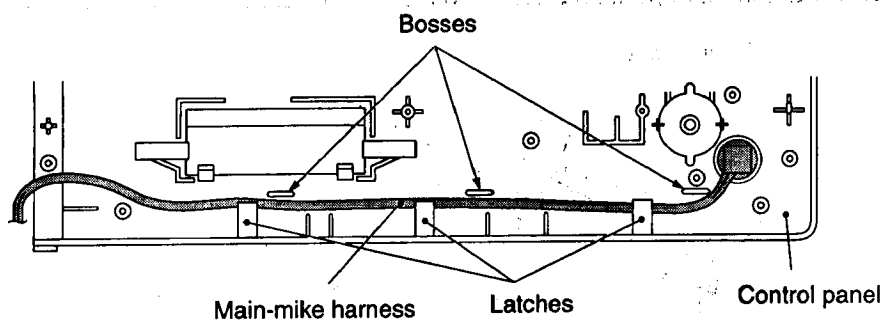
- Make sure that the main-panel harness and main-mike harness are routed through the groove provided on the recording paper cover and are kept in place with the panel lock arm, as illustrated on page IV-11.

## 1.5 Recording Paper Cover, Panel Rear Cover, Control Panel and Microphone

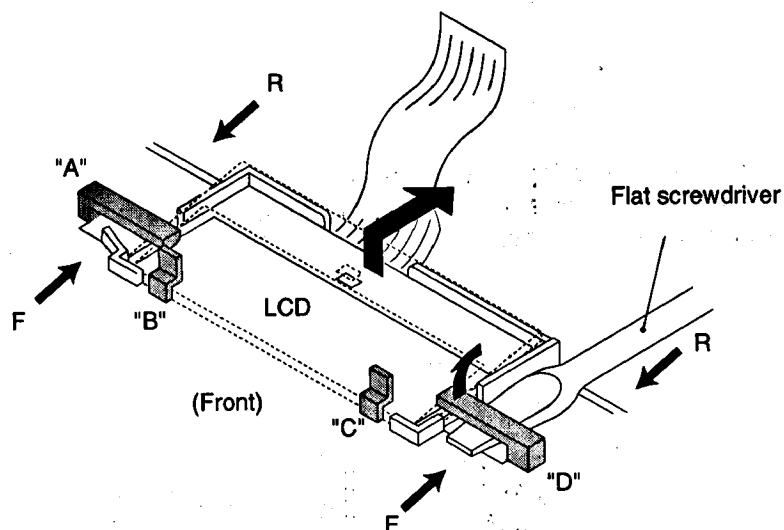
- (1) Place the control panel ASSY upside down.
- (2) Turn the panel lock arm until the cutout provided in it becomes aligned with the boss of the arm support, then pull it out to the left.
- (3) Remove the two screws "a" from the recording paper cover and lift up the rear edge of the cover.
- (4) Remove the ADF parts (ADF film, separator and leaf spring), using the spring hook and a flat screwdriver. Once removed, they will become unusable and new parts should have to be put back in.
- (5) Remove the four screws "b" from the panel rear cover, then unhook the latch "L" and lift up the cover.
- (6) To take out the control panel PCB and the FPC key, unlock the LCD cable connector and disconnect the LCD flat cable.
- (7) To separate the FPC key from the control panel PCB, unlock the FPC key connector and disconnect the FPC key.



- (8) Take out the microphone and its harness from the control panel.



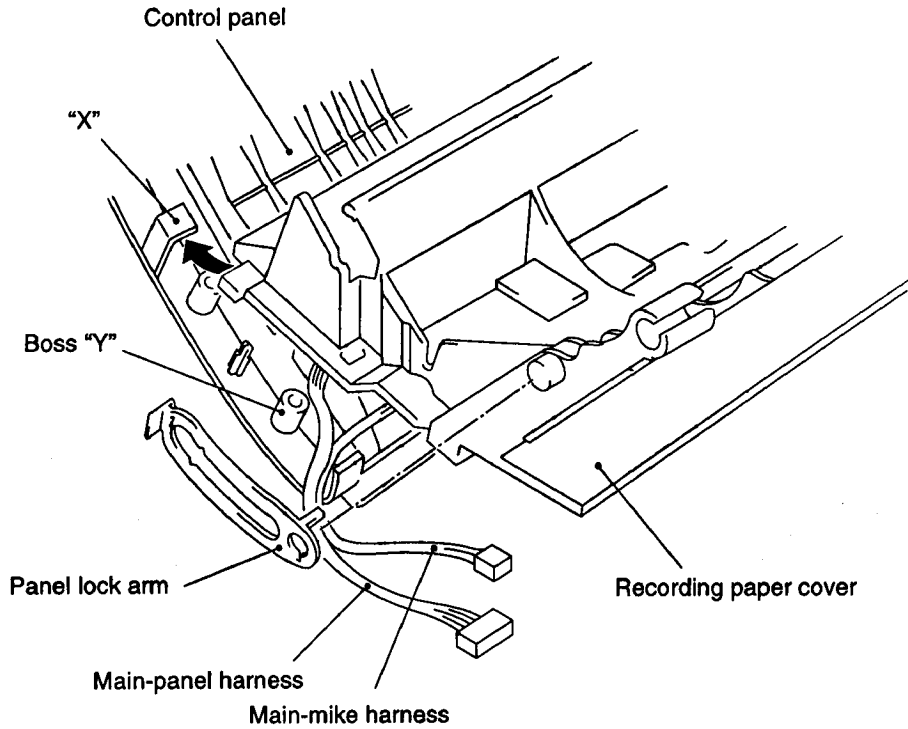
- (9) To take out the LCD, remove the control panel PCB and the FPC key in step (6). As shown below, insert the tip of a flat screwdriver under clamp "D" in the direction of arrow R and push up clamp "D" slightly to release the LCD from clamp "C." In the same way, insert the screwdriver under clamp "A" to release the LCD from clamp "B." Then push out the LCD with your fingers in the direction of arrow F.



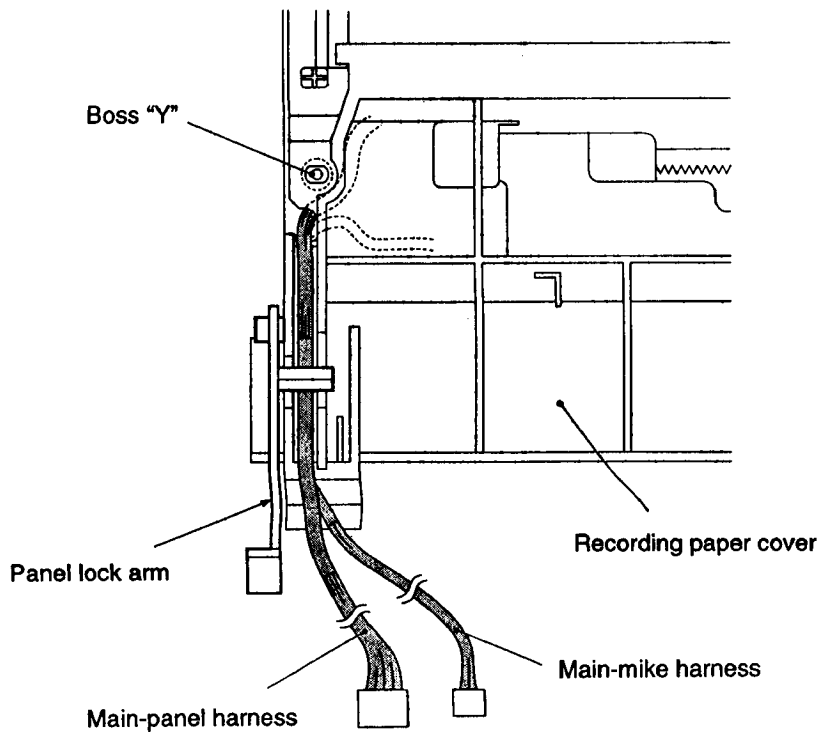
#### ■ Reassembling Notes

- To put the LCD back into place, insert the tip of a flat screwdriver under clamp "D" (see the above illustration) in the direction of arrow F, push up clamp "D" slightly, and then put the right edge of the LCD under clamp "D." In the same way, insert the screwdriver under clamp "A" to put the left edge of the LCD under clamp "A." Then push the LCD into place with your fingers in the direction of arrow R.
- When installing the LCD, take care not to scratch or damage the cover sheet. Replace it if scratched or damaged.
- A new LCD is covered with a protection sheet. Before installing it, remove the protection sheet.

- When setting the recording paper cover on the control panel, first insert the right and left front corners under sections "X" of the control panel and put the cover into place. Make sure that the main-panel harness and main-mike harness are routed as shown below.



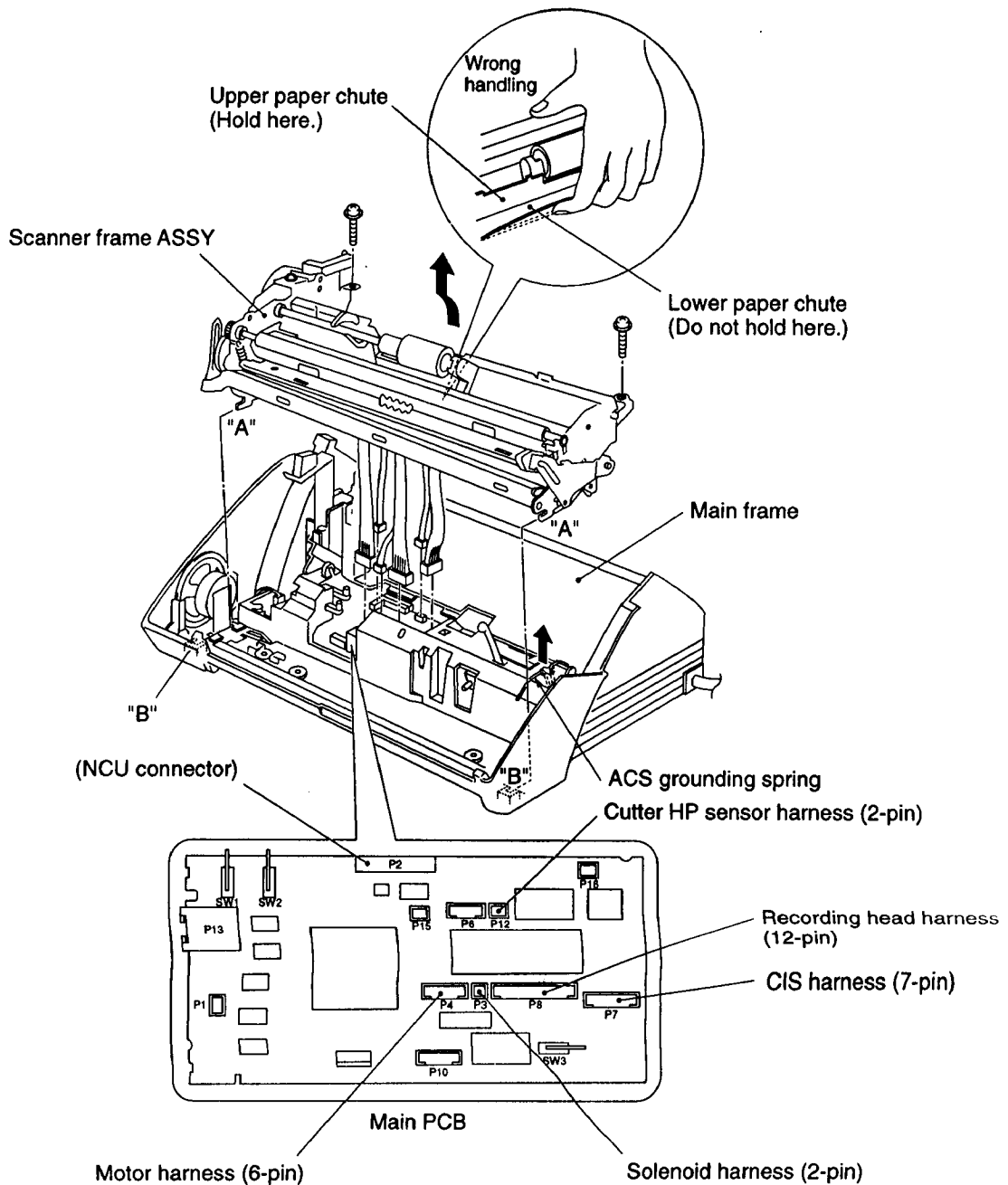
- After securing the recording paper cover with the screws, be sure to route the main-panel harness and the main-mike harness through the groove provided on the recording paper cover and then set the panel lock arm to keep those harnesses in place, as illustrated below.



## 1.6 Scanner Frame ASSY

- (1) Be sure to swing the recording head release lever (blue lever) down to the front position.
- (2) Remove the two screws.
- (3) Slightly lift up the rear edge of the scanner frame ASSY and disconnect the following five harnesses from the main PCB:
  - Cutter home position (HP) sensor harness (2-pin)
  - CIS harness (7-pin)
  - Recording head harness (12-pin)
  - Solenoid harness (2-pin)
  - Motor harness (6-pin)
- (4) Lift up the scanner frame ASSY from the rear and take it out from the main frame.

NOTE: Do not hold the lower paper chute but the upper paper chute. The lower paper chute is easily deformed.



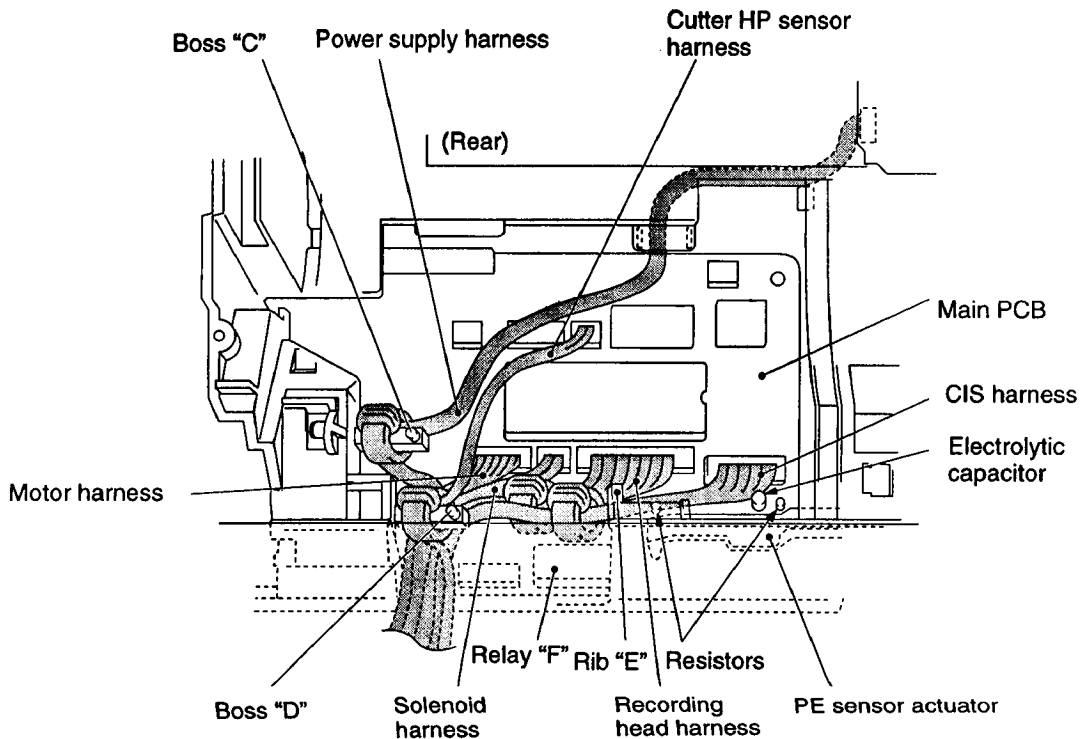
(5) Lift up the ACS grounding spring.

#### ■ Reassembling Notes

- Before putting the scanner frame ASSY back onto the main frame, be sure to set the ACS grounding spring as illustrated on the previous page.
- Make sure that tabs "A" of the scanner frame ASSY are fitted in cutouts "B" provided in the main frame. (See the illustration on the previous page.)
- After putting the scanner frame ASSY back onto the main frame, route the harnesses and arrange the cores as follows, referring to the illustration below.
  - Hook the power supply harness core on boss "C."
  - Check that the cutter HP sensor harness runs through a core, and then hook the core on boss "D."
  - Push the CIS harness core and the recording head harness core into position, to the left of rib "E" and behind relay "F."
  - Route all these harnesses under boss "D."

If any of these harnesses and cores are out of the specified position, the scanner frame ASSY or ROM cover may not be put back into place.

- After connecting these harnesses, check that neither the electrolytic capacitor nor resistors are tilted towards the PE sensor actuator. If tilted, they may interfere with normal operation of the sensor actuator.

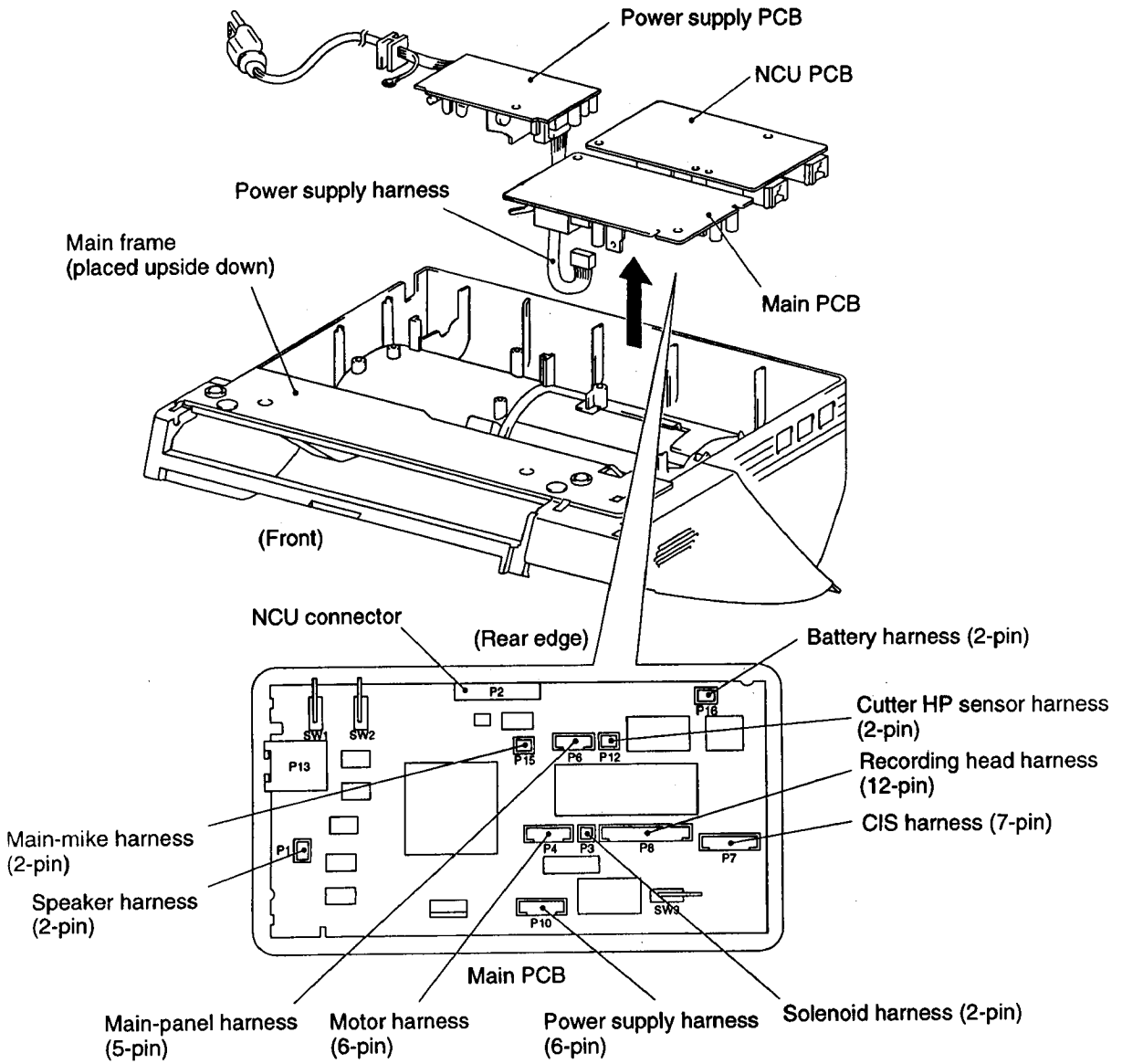




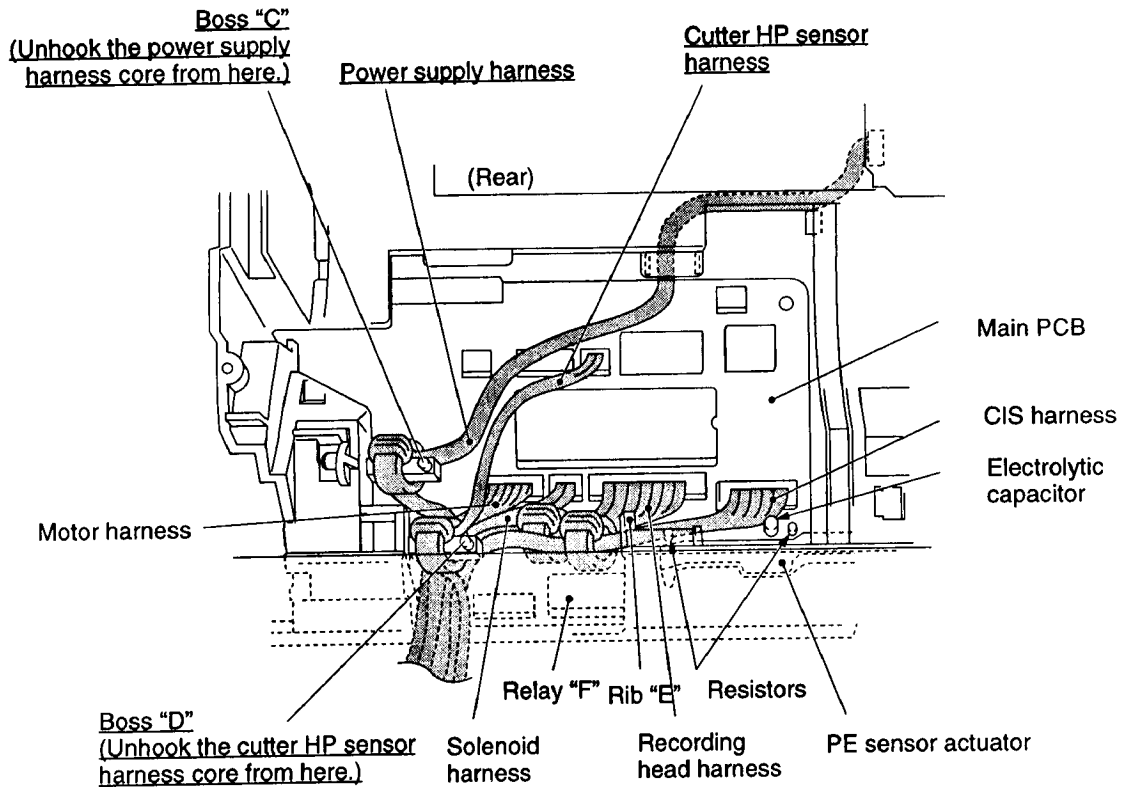
### 1.18 Main PCB, NCU PCB and Power Supply PCB

If you have already removed the scanner frame ASSY and speaker, slightly lift up the main PCB together with the NCU PCB and then disconnect the power supply harness from the main PCB. If the scanner frame ASSY and speaker are not yet removed, follow the steps below:

- (1) Slightly lift up the rear edge of the NCU PCB and disconnect it from the main PCB.



- (2) Attempt to lift up the main PCB slightly. If it is impossible to lift up the PCB to an extent which allows you to disconnect the harnesses, you may not have unhooked the power supply harness core or cutter HP sensor harness core from bosses "C" or "D," respectively. Remove the ROM cover (refer to Section 1.2) and unhook those cores from bosses "C" and "D" illustrated below.



- (3) Slightly lift up the rear edge of the main PCB and disconnect the following harnesses from the main PCB:
- Cutter home position (HP) sensor harness (2-pin)
  - Main-panel harness (5-pin)
  - Main-mike harness (2-pin)
  - Speaker harness (2-pin)
  - Motor harness (6-pin)
  - Power supply harness (6-pin)
  - Solenoid harness (2-pin)
  - Recording head harness (12-pin)
  - CIS harness (7-pin)
- (4) Lift up the power supply PCB.

### ■ Reassembling Notes

- Make sure that the power supply PCB is completely fitted in the resin PCB supports of the main frame. If it is loosely mounted so that it comes into contact with the bottom plate, a short circuit may occur.
- After putting the scanner frame ASSY back onto the main frame, route the harnesses and arrange the cores as follows, referring to the illustration given on the previous page.
  - Hook the power supply harness core on boss "C."
  - Check that the cutter HP sensor harness runs through a core, and then hook the core on boss "D."
  - Push the CIS harness core and the recording head harness core to the left of rib "E" and behind relay "F."
  - Route all these harnesses under boss "D."

If any of these harnesses and cores are out of the specified position, the scanner frame ASSY or ROM cover may not be put back into place.

- After connecting these harnesses, check that neither the electrolytic capacitor nor resistors are tilted towards the PE sensor actuator. If tilted, they may interfere with normal operation of the sensor actuator.

# **CHAPTER V. MAINTENANCE MODE**

WSW26 (Function setting 4)

Selector No.	Function	Setting and Specifications
1	Application of DC wetting pulse	0: OFF      1: ON
2	Overvoltage limiter at the applying time of a wetting pulse	0: ON      1: OFF
3	Not used.	
4 5	No. of CNG cycles to be detected (when the line is connected via the external telephone except in the external TAD mode)	No. 4 5 0 0 : No detection (A) 0 1 : 1 (B) 1 0 : 1.5 (C) 1 1 : 2 (D)
6 7	No. of CNG cycles to be detected (when the line is connected via the external telephone in the external TAD mode or via the facsimile equipment in F/T mode)	No. 6 7 0 0 : 0.5 (A) 0 1 : 1 (B) 1 0 : 1.5 (C) 1 1 : 2 (D)
8	FAX reception after the time-out of pseudo ring backtones in F/T mode	0: YES      1: NO

● **Selectors 1 and 2: Application of DC wetting pulse and overvoltage limiter**

These selectors take effect only when the UK version of the facsimile equipment is set up for the British Telecom's caller ID service or its equivalent.

Selector 2 takes effect only when selector 1 is set to "1."

● **Selectors 4 and 5: No. of CNG cycles to be detected**

The equipment interprets a CNG as an effective signal if it detects a CNG signal by the number of cycles specified by these selectors when the line is connected via the external telephone except in the external TAD mode.

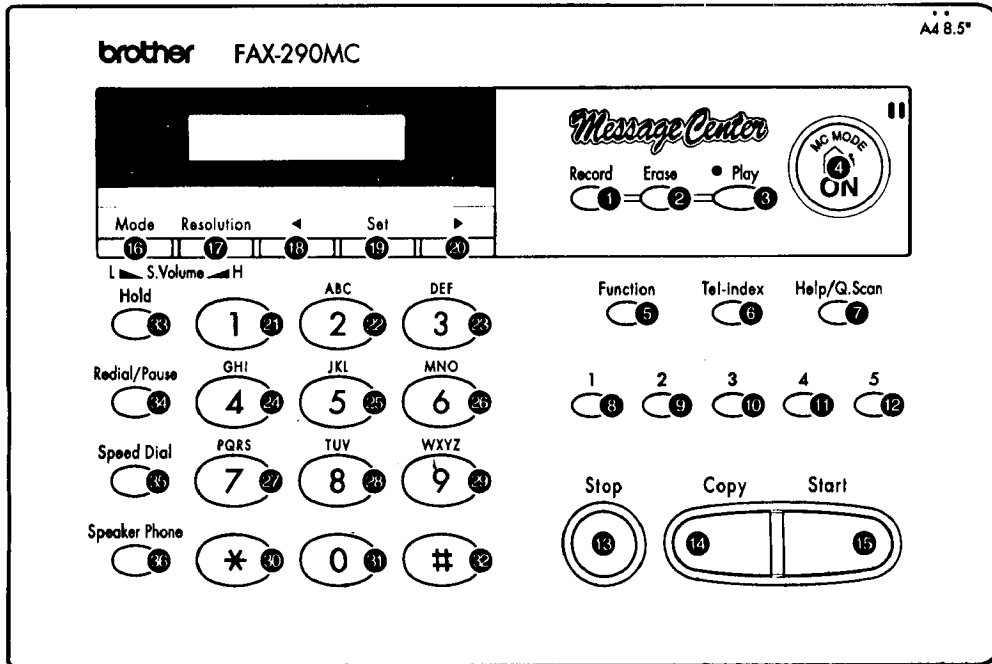
● **Selectors 6 and 7: No. of CNG cycles to be detected (For those models not equipped with a built-in TAD)**

The equipment interprets a CNG as an effective signal if it detects a CNG signal by the number of cycles specified by these selectors when the line is connected via the external telephone in the external TAD mode or via the facsimile equipment in F/T mode.

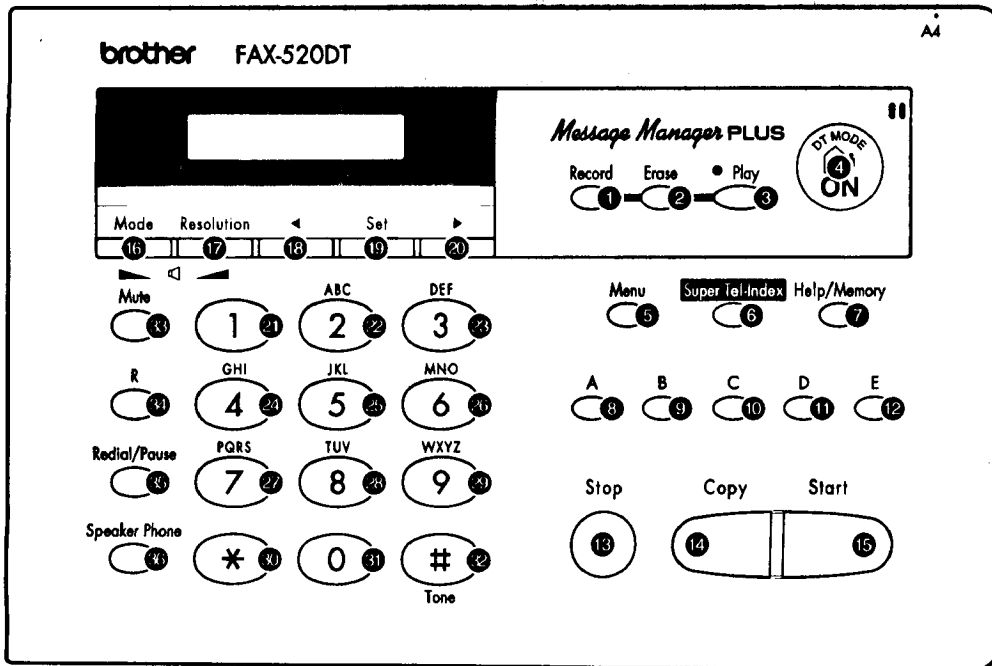
● **Selector 8: FAX reception after the time-out of pseudo ring backtones in F/T mode**

If this selector is set to "0," the equipment enters the facsimile receive mode after issuing pseudo ring backtones. If it is set to "1," the equipment disconnects the line after issuing pseudo ring backtones.

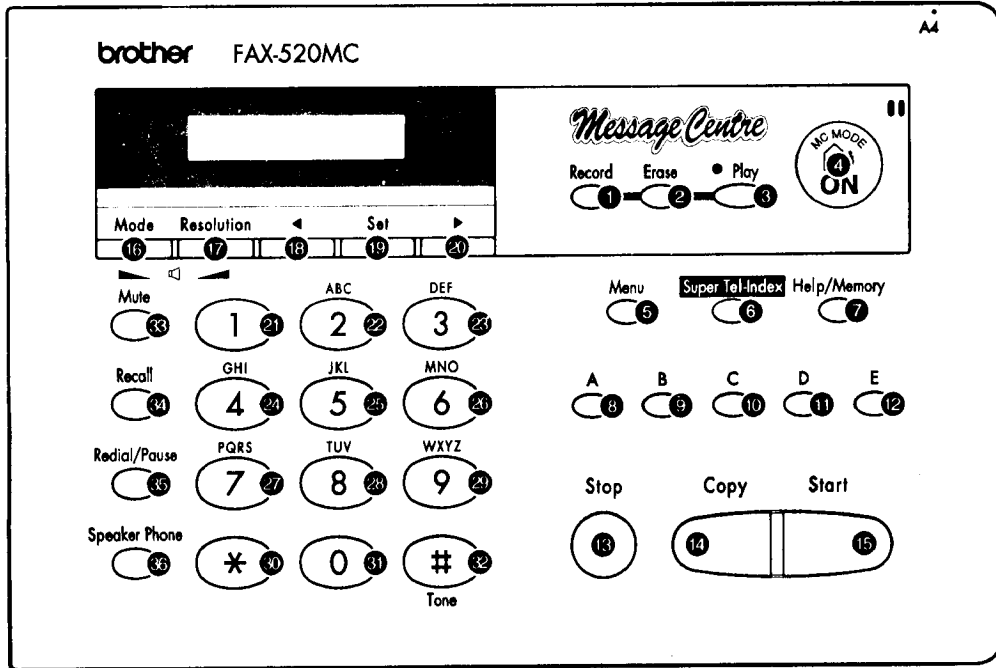
FAX-270MC/290MC



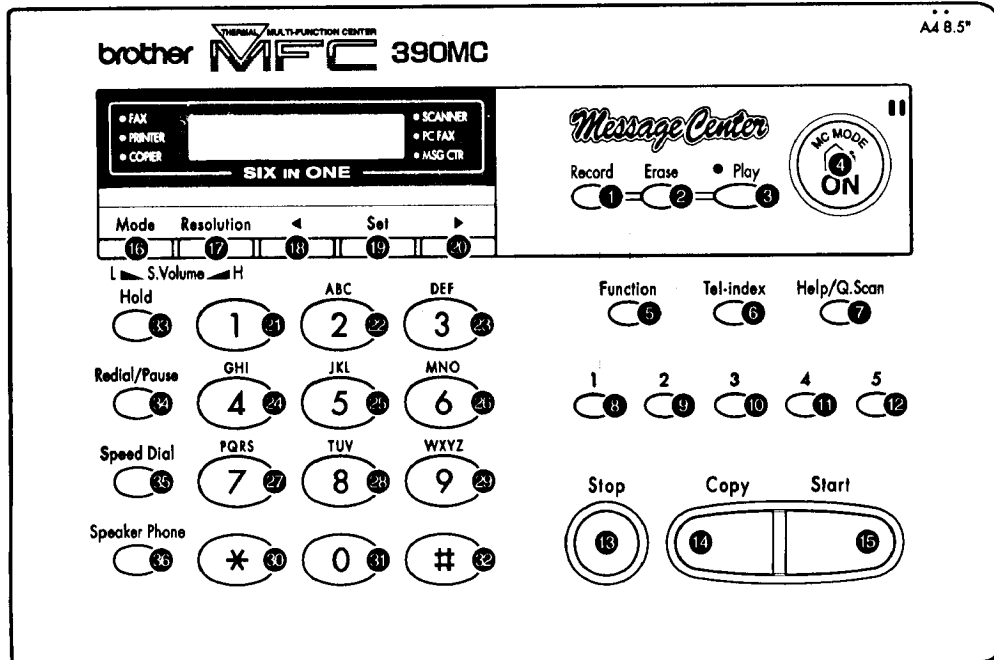
FAX-520DT



FAX-520MC



MFC370MC/390MC



### 3.10 Document Draw Adjustment

After replacement of the main PCB or CIS, or if data stored in the E<sup>2</sup>PHOM is damaged, you need to carry out this procedure.

#### ■ Function

This function adjusts how much the document is drawn in, starting at the point when the document rear sensor is turned on until the leading edge of the document reaches the scanning start position.

#### ■ Operating Procedure

- (1) In the initial maintenance mode, set the TC-025 chart on the document stacker.

The message "DOC.READY" appears on the LCD.

- (2) Press the **Help** key.

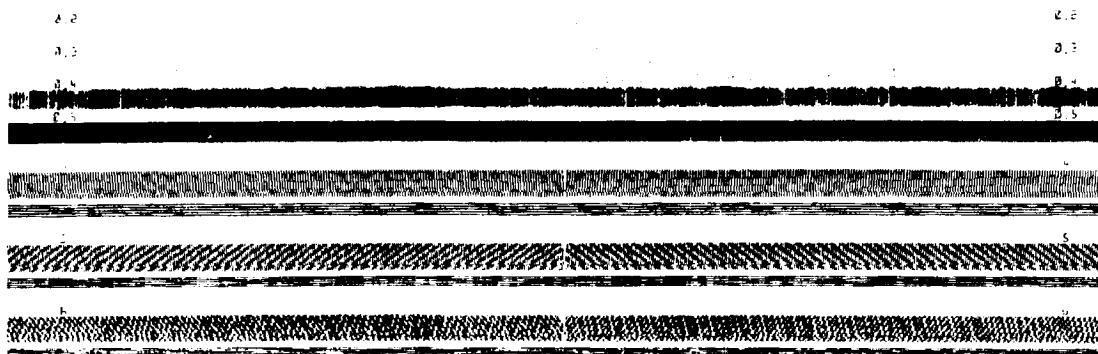
The equipment beeps and draws in the TC-025 chart to the scanning start position. While drawing it in, the equipment counts patterns on the chart to determine the amount of draw.

Upon completion of normal counting, the equipment shows the message "COPYING P.01" on the LCD and begins copying the TC-025 chart. The message "REAR SENSOR IS ADJUSTED" and the copied image will be printed out on recording paper as shown below.

If any error occurs during counting, the message "MACHINEERROR AB" appears on the LCD, with no copying of the TC-025 chart onto the recording paper taking place. However, only the message "REAR SENSOR IS ADJUSTED" will be printed out.

TC - 025

1996. 8. 29



REAR SENSOR IS ADJUSTED.

Printout after Normal Completion of Document Draw Adjustment



**FAX-270MC/290MC/520DT/520MC  
MFC370MC/390MC**

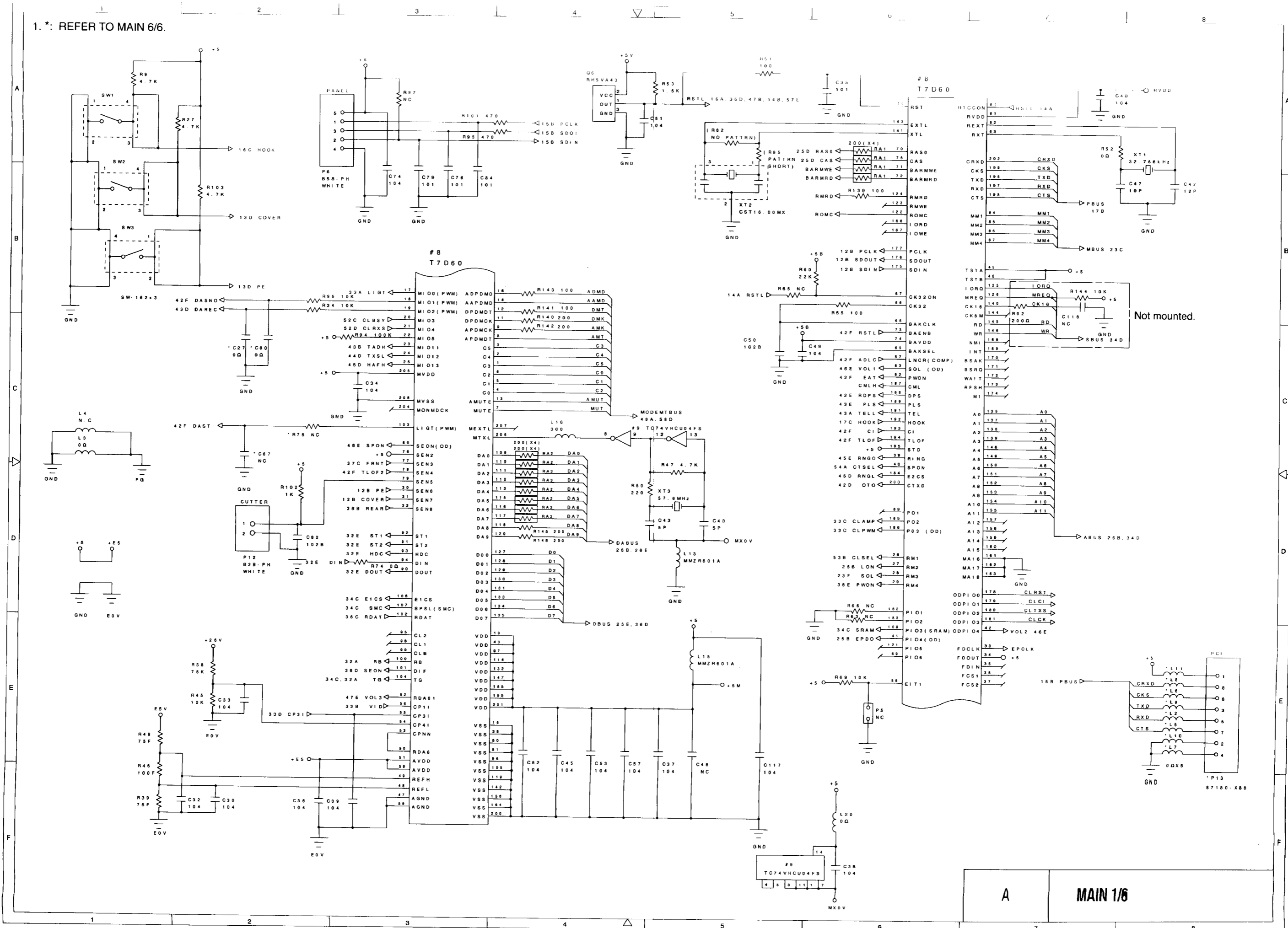
**APPENDICES**

Circuit Diagrams

- A. Main PCB
- B. Network Control Unit (NCU) PCB
- C. Control Panel PCB



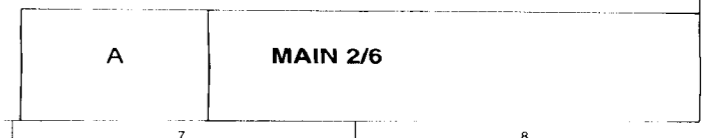
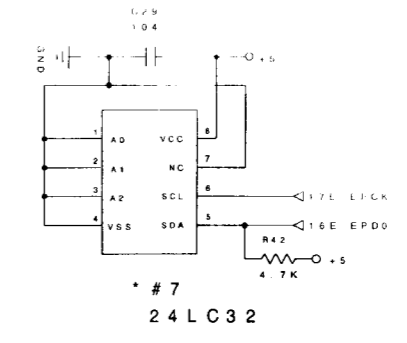
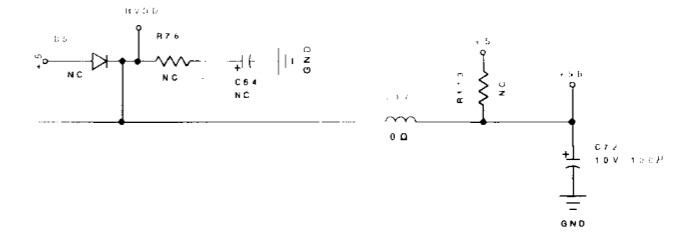
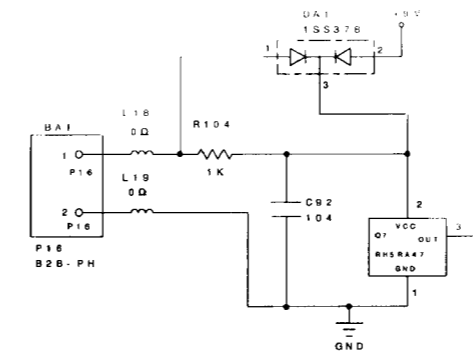
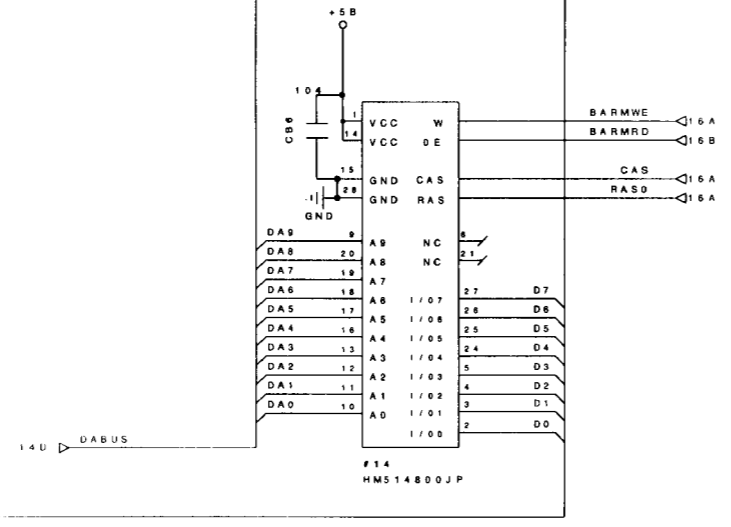
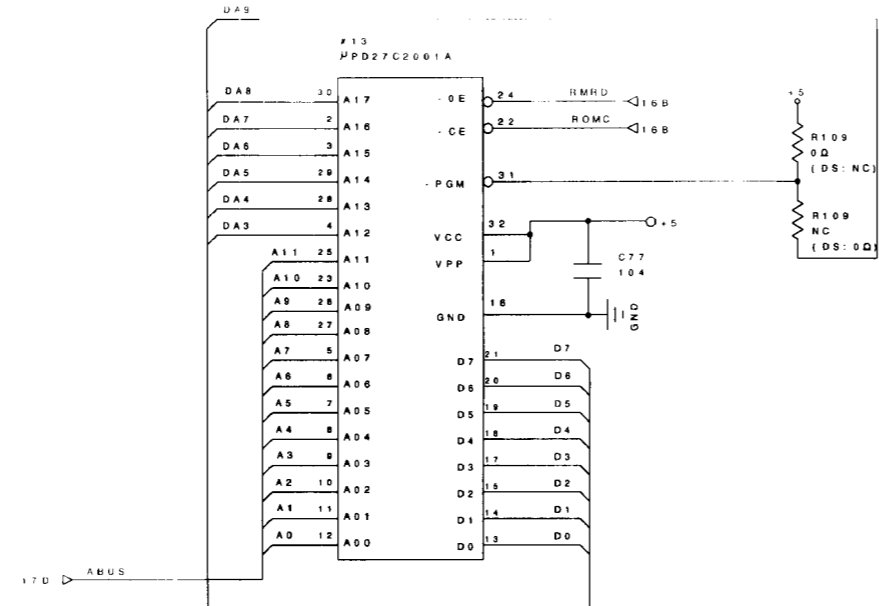
1. \*: REFER TO MAIN 6/6.



A	MAIN 1/6
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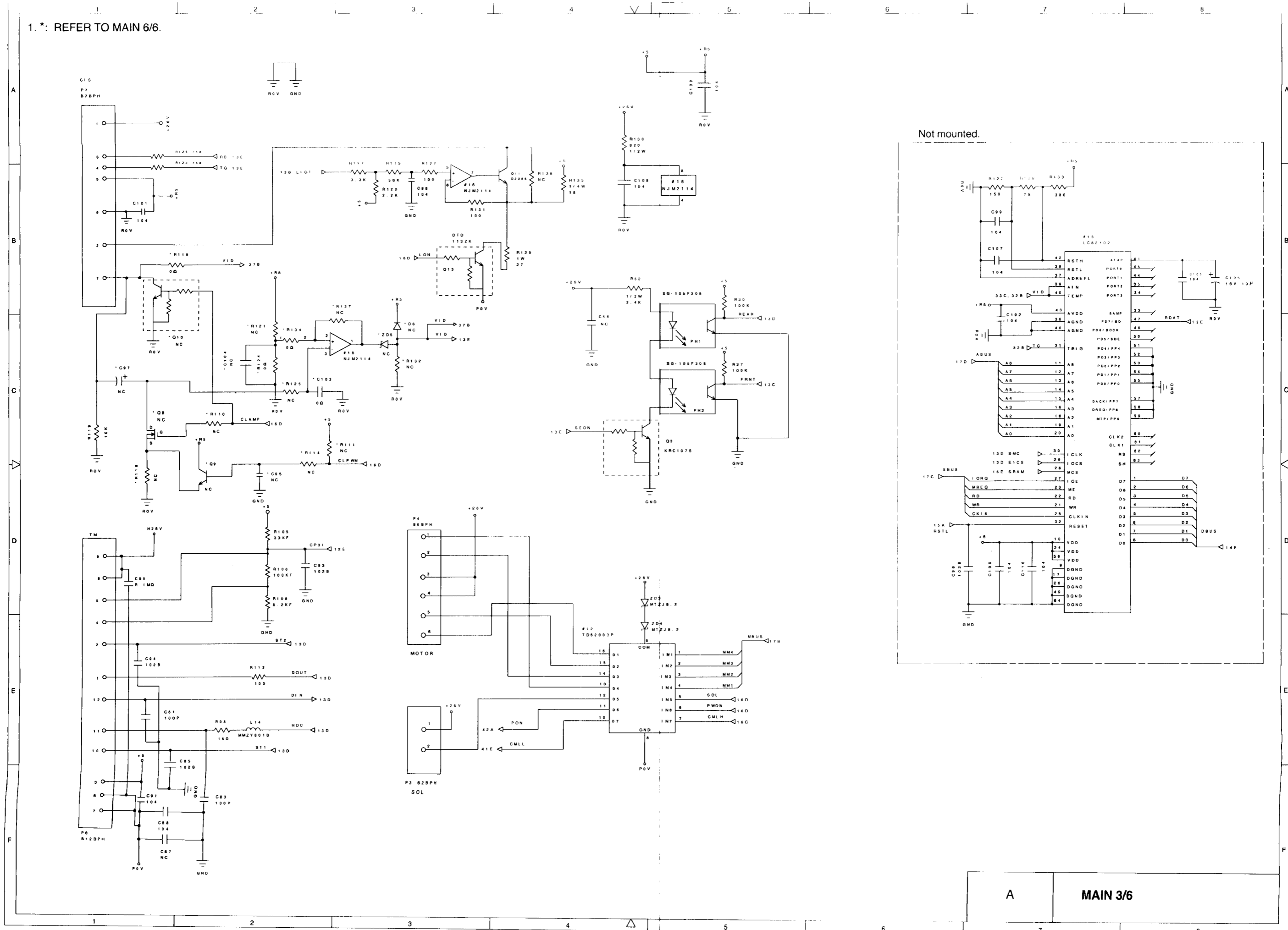


1. \*: REFER TO MAIN 6/6.





1. \*: REFER TO MAIN 6/6.



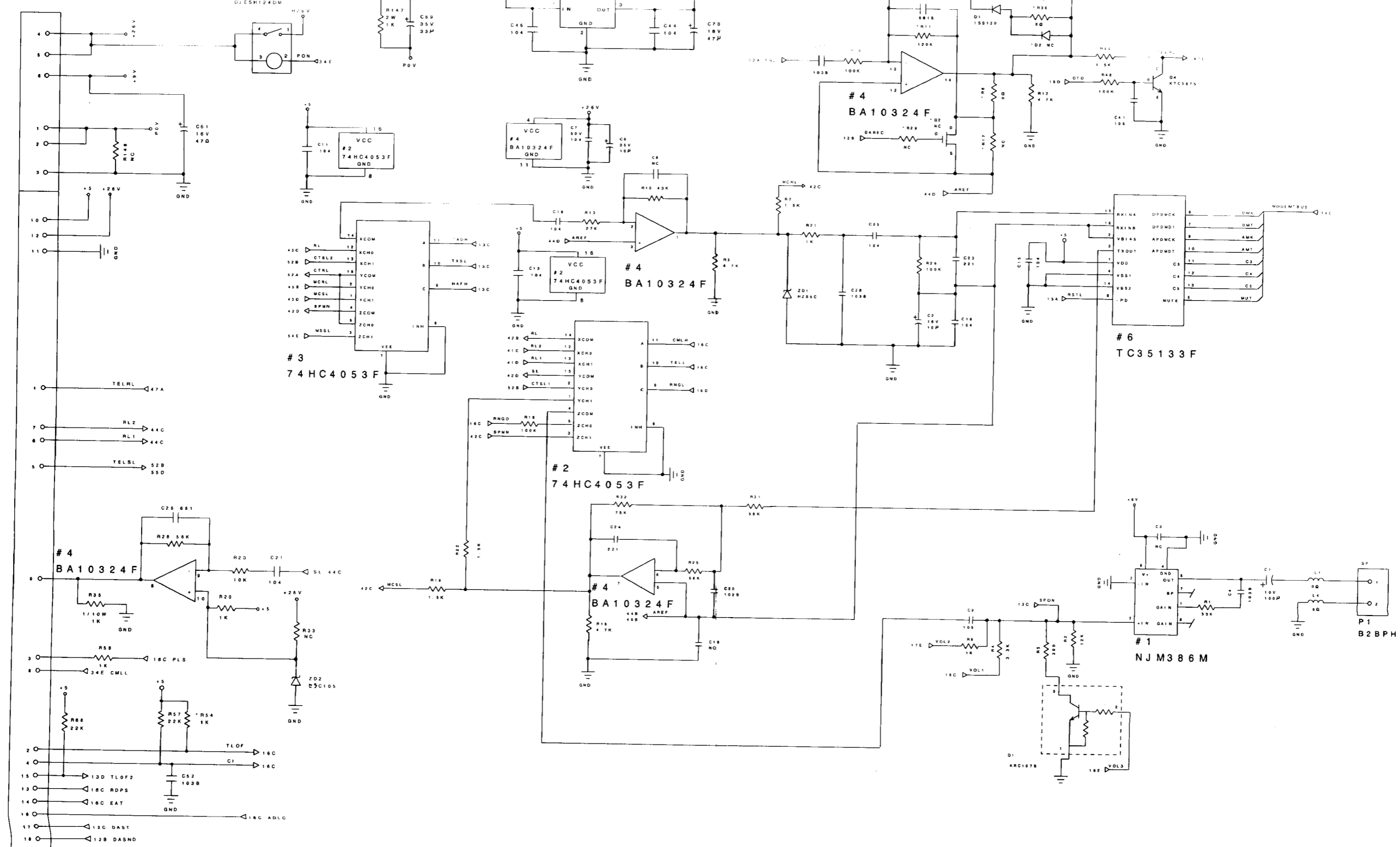
A MAIN 3/6





1. \*: REFER TO MAIN 6/6.

P10  
B5BPH  
POWER

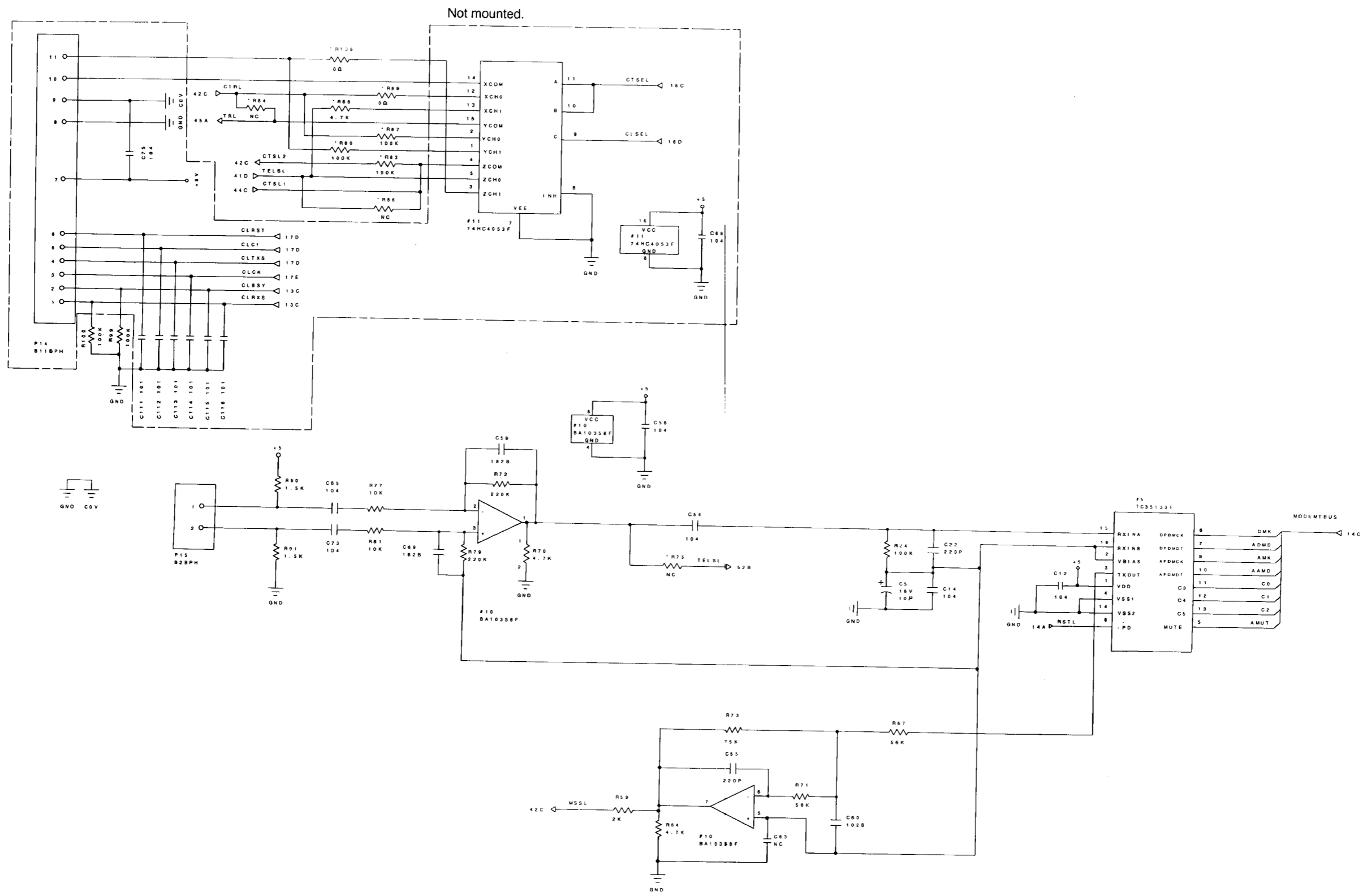


P2  
9110S12L  
NCU

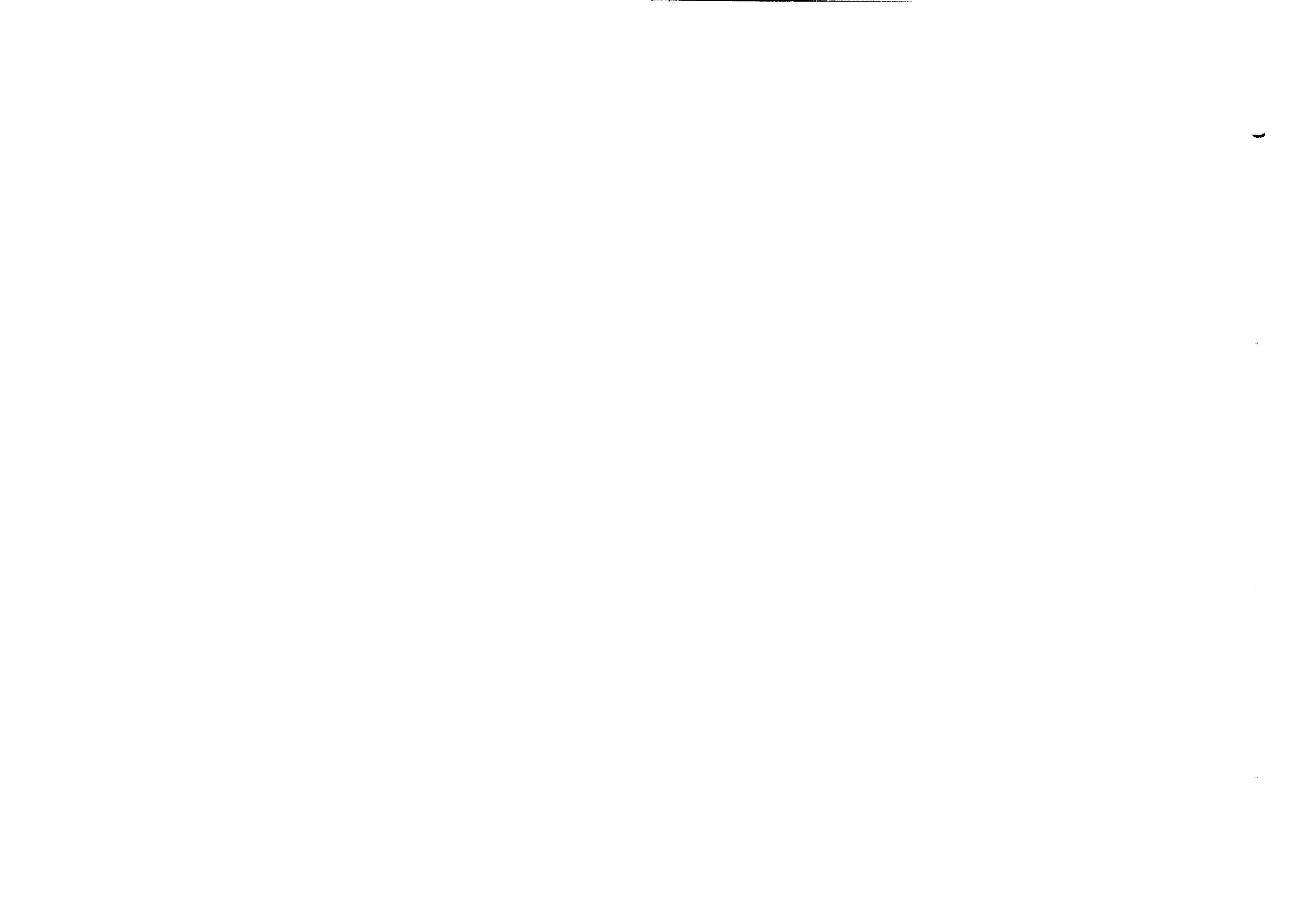
A MAIN 4/6



1. \*: REFER TO MAIN 6/6.



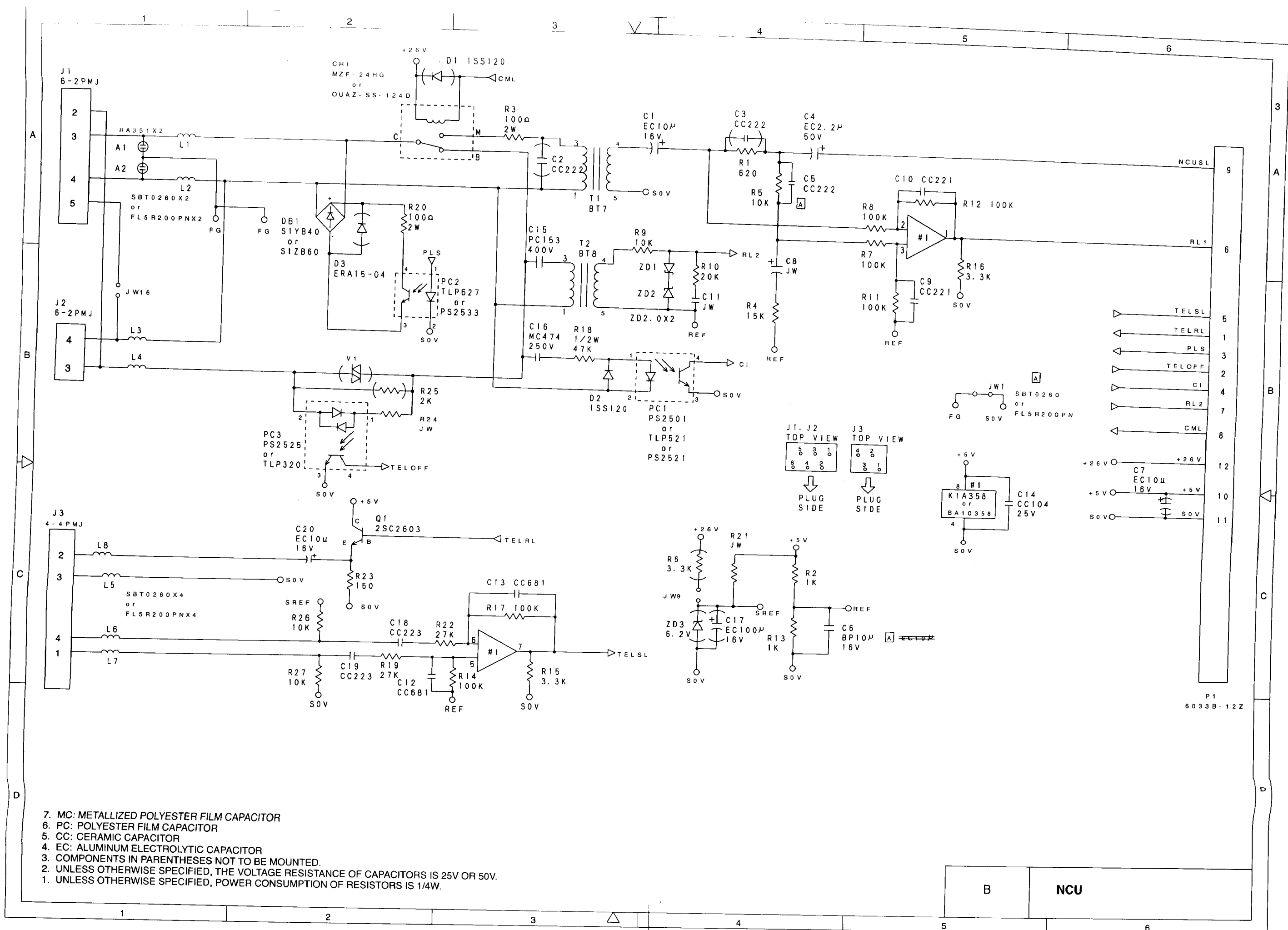
A MAIN 5/6



		FAX-270MC/290MC, MFC370MC/390MC		FAX-520DT/ 520MC *1	FAX-520DT *2		
		S. ASSY 01	S. ASSY 11	S. ASSY 13			
PAGE	NO.						
1	PCI	P13	87180-X88	87180-X88	87180-X88		
		L2, L5	MMZR601A	MMZR601A	MMZR601A		
		L8, L9	MMZR601A	MMZR601A	MMZR601A		
		L7, L10	0Ω	0Ω	0Ω		
		L6	MMZR601A	MMZR601A	MMZR601A		
		L11	MMZR601A	MMZR601A	MMZR601A		
	FG	L3	0Ω	0Ω	0Ω		
		R78	X	10kΩ	10kΩ		
	PWM	C27	0Ω	CC104	CC104		
		C67	X	CC104	CC104		
		C80	0Ω	CC104	CC104		
		RTI/TTI	P5	X	X	X	
	READ	<input type="checkbox"/>	X	X	X		
	2	EEPROM #7	E2P24LC16	E2P24LC16	E2P24LC16		
ROM/2M		R109	0Ω	0Ω	X		
ROM/4M		R107	X	X	0Ω		
3	READ	<input type="checkbox"/>	X	X	X		
		R116 C103	X	X	X		
		Q8	FET2SK1399	FET2SK1399	FET2SK1399		
		Q9	2SC3052	2SC3052	2SC3052		
		Q10	KRC107S	KRC107S	KRC107S		
		ZD5	02CZ2.0Z	02CZ2.0Z	02CZ2.0Z		
		D6	1SS120	1SS120	1SS120		
		R110	1KΩ	1KΩ	1KΩ		
		R111	2.2KΩ	2.2KΩ	2.2KΩ		
		R114	22KΩ	22KΩ	22KΩ		
		R118	10KΩ	10KΩ	10KΩ		
		R121	2KΩ	2KΩ	2KΩ		
		R125 R137	470Ω	470Ω	470Ω		
		R132	470Ω	470Ω	470Ω		
		C95 C104	CC104	CC104	CC104		
		C97	10μ	10μ	10μ		
		R124	300Ω	300Ω	300Ω		
		R134	2.2KΩ	2.2KΩ	2.2KΩ		
		4	NCU	P2	9110S-12L	9110S-18L	9110S-18L
				R14	200KΩ	200KΩ	200KΩ
RLR	Q2		X	FET2SK208	FET2SK208		
	D2 D4		X	1SS120	1SS120		
	R36 R41		0Ω	X	X		
	R11		120KΩ	27KΩ	27KΩ		
	R8		0Ω	1KΩ	1KΩ		
	R17		X	680Ω	680Ω		
	R29		X	47KΩ	47KΩ		
	C10		CC681	CC122	CC122		
TLOF	R54	1KΩ	22KΩ	22KΩ			
5	CL	<input type="checkbox"/>	X	X	X		

\*1 For versions other than those given in \*2  
 \*2 For the UK//CYP/BEL versions



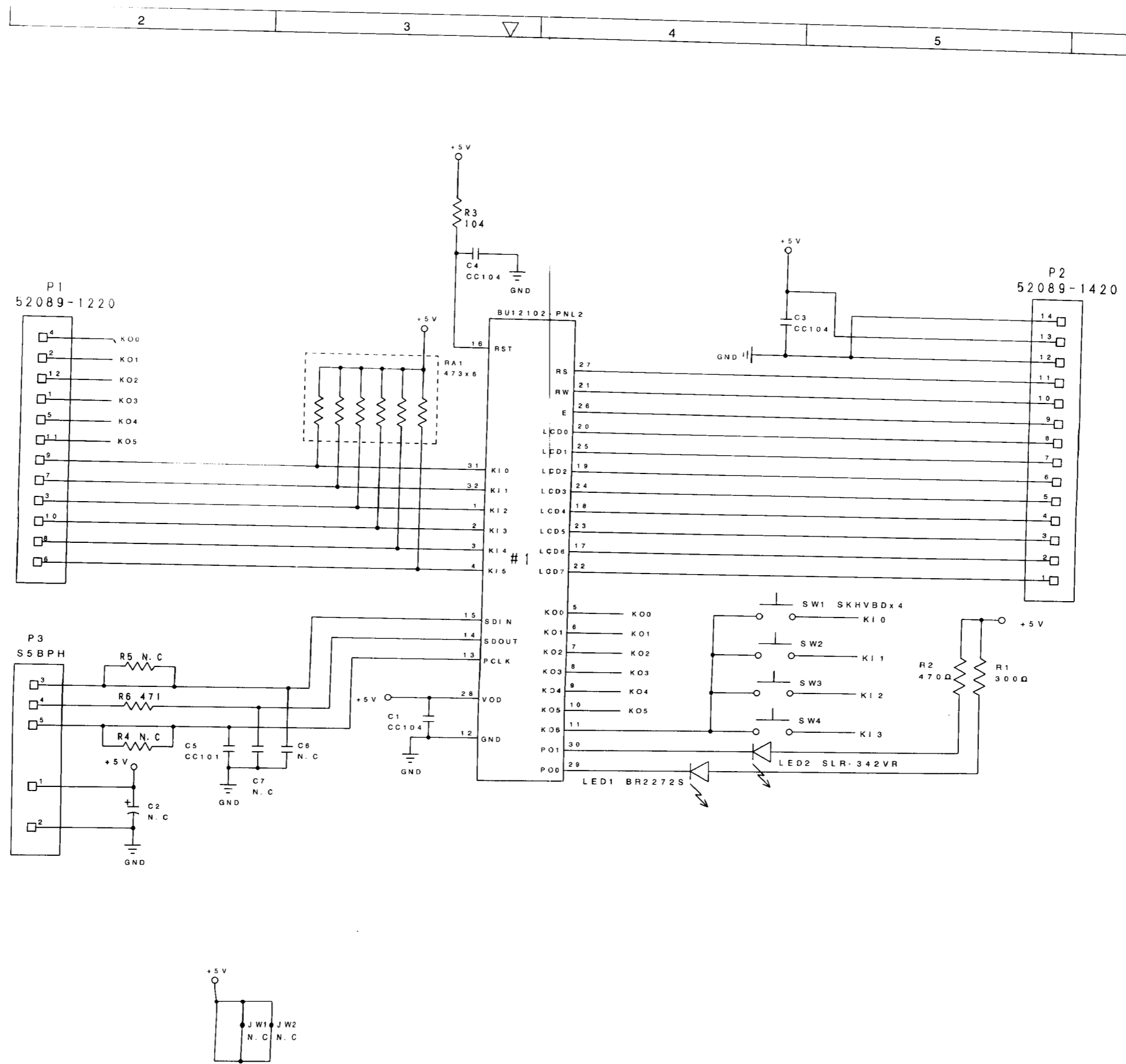


- 7. MC: METALLIZED POLYESTER FILM CAPACITOR
- 6. PC: POLYESTER FILM CAPACITOR
- 5. CC: CERAMIC CAPACITOR
- 4. EC: ALUMINUM ELECTROLYTIC CAPACITOR
- 3. COMPONENTS IN PARENTHESES NOT TO BE MOUNTED.
- 2. UNLESS OTHERWISE SPECIFIED, THE VOLTAGE RESISTANCE OF CAPACITORS IS 25V OR 50V.
- 1. UNLESS OTHERWISE SPECIFIED, POWER CONSUMPTION OF RESISTORS IS 1/4W.

B	NCU
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C

CONTROL PANEL 1/2



PF PANEL KEY MATRIX REFERENCE TABLE 1

KEY NO.	KEY NAME MC (CL)	KEY COE
1	MODE	1B
2	RESOLUTION	0B
3	←	0C
4	SET	04
5	→	03
6	HOOK (子機)	1E
7	10KEY-1	0E
8	10KEY-2	06
9	10KEY-3	26
10	HOLD (PAUSE)	19
11	10KEY-4	09
12	10KEY-5	01
13	10KEY-6	21
14	REDIAL/PAUSE (HOLD)	1A
15	10KEY-7	0A
16	10KEY-8	02
17	10KEY-9	22
18	SPEED DIAL (HOOK)	1D
19	10KEY-*	0D
20	10KEY-0	05
21	10KEY-#	25
22	FUNCTION	23
23	TEL-INDEX	2B
24	HELP	14
25	1TOUCH-1	24
26	1TOUCH-2	2C
27	1TOUCH-3	2E
28	1TOUCH-4	29
29	1TOUCH-5	16
30	STOP	2D
31	COPY	2A
32	START	15
SW1	MCMODE	31
SW2	PLAY	32
SW3	ERASE	33
SW4	RECORD	34

PF PANEL KEY MATRIX REFERENCE TABLE 2

	KO0 P1-4P	KO1 P1-2P	KO2 P1-12P	KO3 P1-1P	KO4 P1-5P	KO5 P1-11P	KO6 PCB
KI0 P1-9P	12	11		10	13	28	SW1
KI1 P1-7P	16	15		14	17	31	SW2
KI2 P1-3P	5	2		1	22	23	SW3
KI3 P1-10P	4	3	24		25	26	SW4
KI4 P1-8P	20	19	32	18	21	30	
KI5 P1-6P	8	7	29	6	9	27	

C

CONTROL PANEL 2/2





**brother**®