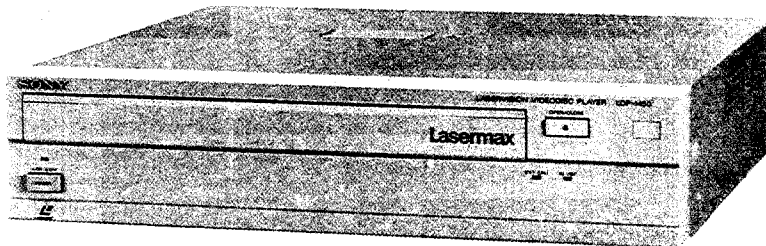


# LDP-1450

## SERVICE MANUAL

US Model  
Canadian Model



## Lasermax

### SPECIFICATIONS

#### Playback system

Disc format	Laser Vision
Pick-up method	Laser beam (reflective)
Laser	Diode laser ( $\lambda = 7800\text{\AA}$ )
Emission duration	Continuous
Laser output	0.4 mW* max.
Videodisc	12" and 8"
Maximum playing time	CAV: 30 min/side CLV: 60 min/side
Spindle revolution	CAV: 1800 r.p.m. CLV: 1800 to 600 r.p.m.
Access time	CAV: 2 sec (full stroke average by frame) 10 sec (by chapter) CLV: 10 sec

#### Video

Signal	EIA standards, NTSC color
Output	1.0 V p-p, 75 ohms unbalanced, sync negative
Resolution	400 lines

#### Audio

Output	Line out: -3.7 dBV (1 kHz, 100% MOD, load impedance 47 kilohms) load impedance 2 kilohms and more unbalanced
Signal-to-noise ratio	CX ON: 70 dB and more CX OFF: 56 dB and more
Frequency response	40 Hz to 20kHz

#### General

Power requirements	120 V AC, 60 Hz
Power consumption	39 W
Operating temperature	5°C to 35°C (40°F to 95°F)
Operating humidity	25% to 80%
Storage temperature	-20°C to 60°C (-4°F to 140°F)
Dimensions	Approx. 430 x 100 x 410 mm (w/h/d) (16 <sup>15</sup> / <sub>16</sub> x 3 <sup>15</sup> / <sub>16</sub> x 16 <sup>1</sup> / <sub>8</sub> inches)
Weight	Approx. 9.7 kg (21 lb 6 oz)
Optional accessories	Interface Manual LDM-G1000 Rack Mount Kit RMM-121 Remote Control Unit RM-2001

Design and specifications subject to change without notice.

\* This output is the value measured at a distance of about 1.6 mm from the objective lens surface on the Optical Pick-up Block.



 **VIDEODISC PLAYER**  
**SONY®**

# SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.

2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.

Check the line cord for cracks and abrasion. Recommend the replacement of any such line cord to the customer.

6. Check the B+ voltage to see it is at the values specified.

Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

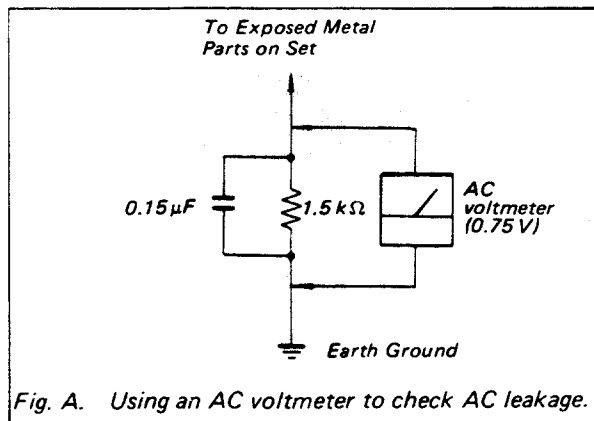


Fig. A. Using an AC voltmeter to check AC leakage.

## LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.


1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

## CAUTION


Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

AS the laser beam used in this videodisc player is harmful to eyes, do not attempt to disassemble the cabinet. Refer servicing to qualified personnel only.

## SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

## ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UN TRAME ET UNE MARQUE  SUR LES DIAGRAMMES SCHÉMATIQUES, LES VUES EXPLOSÉES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS MANUEL OU DES SUPPLÉMENTS PUBLIÉS PAR SONY. LES RÉGLAGES DU CIRCUIT QUI SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT SONT IDENTIFIÉS DANS CE MANUEL. SUIVRE LES PROCÉDURES QUAND LES COMPOSANTS CRITIQUES SONT REMPLACÉS OU LE FONCTIONNEMENT IMPROPRE EST SUSPECTÉ.

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This section is extracted from instruction manual.

## SECTION 1 GENERAL

### 1-1. FEATURES

LDP-1450 is designed to be controlled mainly by an external microcomputer with an RS-232C interface connector. Control codes from the computer allow various operations such as playback in varied speeds, repeat, pause, or search on the videodisc player. Also, the OPTIONAL FUNCTION selector at the rear allows the videodisc player to operate in ways other than in the standard operation mode set at the factory.

#### No physical contact between pick-up and disc

A laser beam acts as the signal pick-up for contact-free playback and no wear on your valuable videodiscs. The audiovisual pit pattern is recorded below the surface of the videodisc for safe handling. There is no more need to be constantly on your guard against fingerprints and dust.

#### High speed access

Full stroke search on the disc is approximately 2 seconds (CAV, by frame).

#### Search operation by the second on CLV disc

Desired picture address on a CLV disc can be searched for by specifying the time (second) number recorded on the disc.

#### Remote control operation

By using the RM-2001 optional remote control unit, playback both in forward and reverse directions or special operations such as search and repeat are available. RM-2001 can be used with LDP-1450 only in wired mode.

#### Character generator incorporated

Character generator is incorporated in the LDP-1450 so that it can display a desired character according to a character code given by the connected computer. There are three character modes: 20 characters x 1 line, and 10 characters x 3 lines.

#### Automatic front loading

Videodiscs are inserted in front of the LDP-1450, which saves space when compared to top loading models.

#### Mountable on 19" rack

The videodisc player can be mounted on an EIA standard 19" rack. An optional RMM-121 rack mount kit is available to install the videodisc player into the 19" rack.

#### Black burst video out signals in the search mode

The characters or pictures output from the computer are superimposed over the videodisc picture, and they can even be seen in the search mode as the videodisc player uses the black burst video out signals to adjust the picture.

#### Screw-less mechanism for transportation

This new mechanism eliminates the need to tighten special screws to fix the laser pick-up before transporting the videodisc player.

#### Extended operation modes

By using the OPTIONAL FUNCTION selector, the LDP-1450 operates in extended operation modes. For example, the videodisc player stays in still or stop mode until it receives any operational commands, regardless of how the player is controlled. There are three extended operation modes you can use.

## 1-2. TIPS ON VIDEODISCS

### TYPES OF VIDEODISCS

#### CAV (constant angular velocity) disc

The CAV disc always rotates at a constant speed of 1800 r.p.m. and the laser beam moves from the inner part of the disc to the outer. Up to 30 minutes of playback (54,000 frames) is possible on one side of the disc. Each frame of the playback picture is recorded on one track and is reproduced in one rotation. The frame number is recorded on the track. Flexible playback operation such as variable speed playback, repeat play is possible using the frame numbers as reference.

#### CLV (constant linear velocity) disc

With the CLV disc, the rotational speed varies from 600 r.p.m. to 1800 r.p.m. so that a constant linear velocity is maintained. The laser beam moves from the inner part of the disc to the outer as with CAV discs. Playback of up to one hour is possible on one side of the disc, although only normal play, scan and search operations are possible. The elapsed playback time or the chapter number being played can be displayed on the monitor screen. Searches to the beginning of chapters or specified time codes is possible.

#### \* 1) Frames

The CAV discs have up to 54,000 "frames" which are numbered in sequence. One frame is recorded on one track, that is, a frame is played back with one rotation of the disc. You can search for a particular frame quickly or repeat a particular sequence of frames.

#### \* 2) Picture stop

When the player detects this code the playback enters the still mode. This code may be ignored in the scan and search modes.

#### \* 3) Chapters

There are CAV and CLV discs on which "chapters", as the chapter of a book, are pre-recorded. If a chapter number is displayed after a frame number has been displayed (on a CAV disc) or after playback time is displayed in minutes (on a CLV disc) when you change the display mode, the data are pre-recorded in chapters.

#### \* 4) Lead-in/Lead-out

When the player detects the lead-out code, it returns to the beginning of a disc, detects the lead-in code and repeats playback. When the player detects the lead-in code or lead-out code in SCAN mode, the same result will be obtained.

## COMPARISON OF SONY VIDEODISC CODE TYPES

Type	purpose	location on disc	capacity	customer's creation method	encoding method
<b>I. CAV Discs</b>					
Vertical blanking (partial listing)					
— frame number * 1) (picture numbers)	frame access	all vertical blankings	00001 to 54000	not available	added automatically during mastering
— picture stop * 2)	automatic stop on a frame during "play" and "slow" modes	designated vertical intervals	up to 54000	list of time codes on a master tape to have stops	added during mastering
— chapter number * 3)	divide content into chapters	designated vertical blankings	00 to 79; min chapter = 30 tracks	list of first/last time codes on a master tape of all chapters	added during mastering
<b>II. CLV Discs</b>					
Vertical blanking					
— time code number	time code access	all vertical blankings	00 hr 00 mins 00 sec to 01 hr 00 mins	not available	added automatically during mastering
— chapter number	divide content into chapters	designated vertical blankings	00 to 79; minimum = 30 tracks	list of first/last time codes on a master tape of all chapters	added during mastering
<b>III. CAV/CLV Discs</b>					
Vertical blanking					
— Lead-in * 4)	locate the beginning of the program on a disc	designated vertical blankings		not available	added during mastering
— Lead-out * 4)	locate the end of the program on a disc	designated vertical blankings		not available	added during mastering

### 1-3. PRECAUTIONS

#### On safety

- Operate the unit with 120V AC, 60 Hz.
- Should any solid object or liquid fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Unplug the unit from the wall outlet if it is not to be used for an extended period of time.
- To disconnect a cord, pull it out by the plug. Never pull the cord itself.

#### On installation

- Avoid placing the player in a location subject to:
  - high humidity
  - high temperature
  - excessive dust
  - mechanical vibration
  - direct sunlight
- Allow adequate air circulation to prevent internal heat buildup. Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation holes.
- Do not place any objects on the videodisc player.

#### On operation

- Do not operate the unit right after having transported it from a cold location directly to a warm location or in a room where the temperature rises suddenly because moisture may condense in the operating section of the unit. Wait for about an hour before turning the power on in the new location or keep the rise in room temperature gradual. If the unit is operated with moisture condensation, the unit and the disc may be damaged. Therefore remove the disc immediately when there is a possibility of moisture condensation and no picture is obtained.
- To evaporate the moisture rapidly, leave the player turned on without a disc loaded.
- Remove the disc from the compartment after playing it, if the unit will not be used for any length of time. Do not transport the set with a disc in place.
- To open or close the disc compartment, press the OPEN/CLOSE button. Do not pull or push the disc compartment forcibly.
- When the disc compartment is in the open position, do not press down on it strongly, or place heavy objects.

#### On cleaning

Clean the cabinet, panel and controls with a dry soft cloth, or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent, such as alcohol or benzine, which may damage the finish.

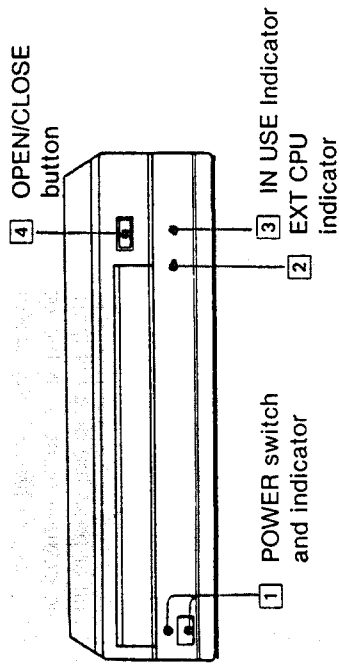
#### On packing

Do not throw away the carton and packing materials. They make an ideal container in which to transport the unit. When shipping the unit to another location, repack it as illustrated on the carton.

If you have any questions about this unit, contact your authorized Sony service facility.

## 1-4. PARTS IDENTIFICATION

### FRONT PANEL



#### 1 POWER switch and indicator

Press to turn the videodisc player on. The POWER indicator will be lit when the player is turned on. Press the button again to turn off the power.

#### 2 EXT CPU indicator

Lights up when the player is controlled by an external computer through the RS-232C interface connector. In this mode, RM-2001 remote control unit cannot be used. The videodisc player will automatically respond to commands given by the external computer.

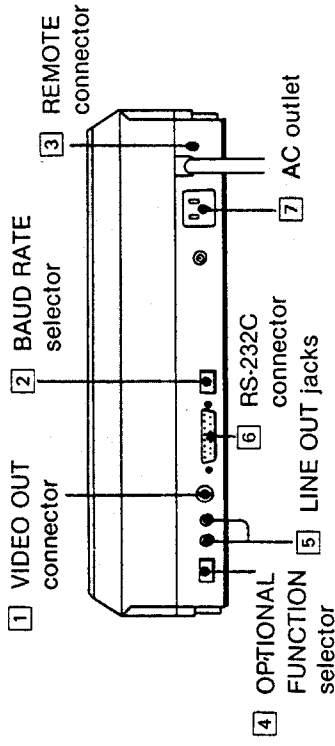
#### 3 IN USE indicator

Blinks while loading or unloading a videodisc, or lights up when the videodisc is being played back within the player. This indicator is not lit when the disc is not loaded on the player even if the power to the player is on.

#### 4 OPEN/CLOSE button

Press to open the disc compartment, and press again to close it. The compartment will also close automatically when it is pushed lightly. Be sure to push the center of the compartment for proper operation of the player.

### REAR PANEL

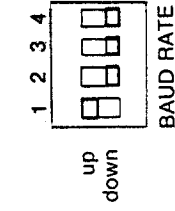


#### 1 VIDEO OUT connector

BNC connector for output of composite video signals.

#### 2 BAUD RATE selector

Select the data transmission speed on the RS-232C line. The baud rate can be set to 9600, 4800, 2400, or 1200 baud. Be sure that the speed set on the videodisc player is matched to that on the connected computer. The data speed is initially set to 1200 at the factory.



Switch setting				Baud rate
1	2	3	4	
up	down	down	down	1200
down	up	down	down	2400
down	down	up	down	4800
down	down	down	up	9600

Set the switches to the desired positions using the tip of a ball-point pen or a similar object.

#### 3 REMOTE connector

Connect to the RM-2001 optional remote control unit. Without the wire the remote control unit is not effective with the videodisc player.

#### 4 OPTIONAL FUNCTION selector

Set the selector so that the videodisc player operates in an extended operation mode. To select an extended operation mode, this selector should be set to the desired position before turning the power on. For details, see page 10.



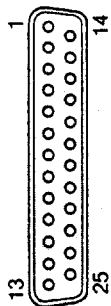
### 5. LINE OUT jacks

Phono jacks (RCA-type) for audio signal output. The audio signals of the channel 1 (CH-1) are output from the 1/L jack, and the signals of the channel 2 are output from the 2/R jack.

### 6. RS-232C connector

Standard 25-pin RS-232C interface connector for communication with an external computer. Refer to page 25 for making connections with an external computer.

### Pin assignment



Pin No.	Signal
1	FG (Frame ground)
2	TxD (Transmit data)
3	RxD (Receive data)
4	RTS (Request to send)
5	CTS (Clear to send)
6	DSR (Data set ready)
7	GND
20	DTR (Data terminal ready)

Each signal conforms to the RS-232C specifications.  
(Output level ON: more than +5V, OFF: less than -5V)

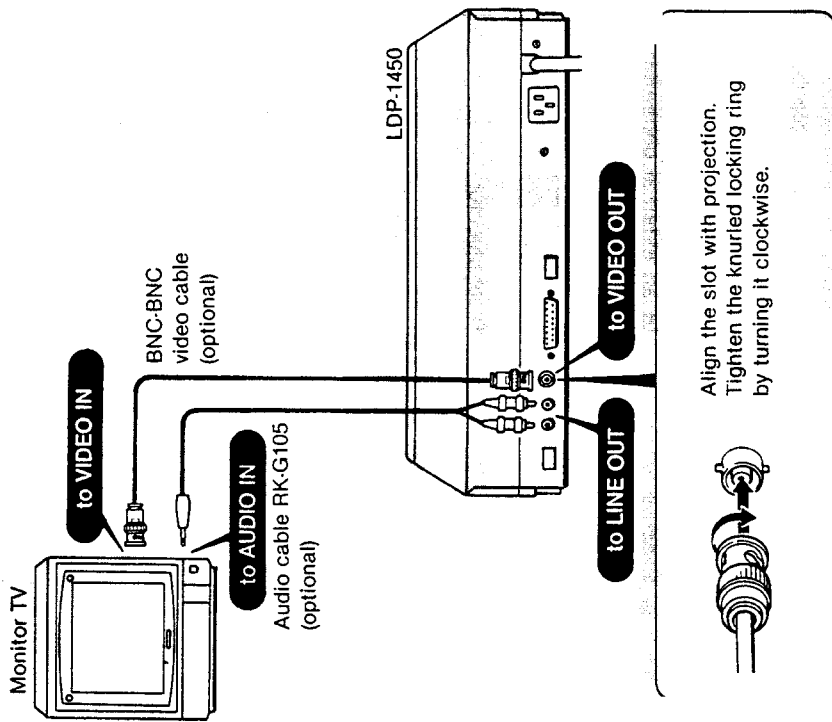
Note: Check the RS-232C pin assignment of the external computer to be connected. There is a modem mode and terminal mode for pin assignment. The RS-232C pin assignment for LDP-1450 is for the terminal mode.

### 7. AC outlet

This outlet supplies ac power to other video equipment whose power consumption is no more than 300 watts. The power is constantly supplied to the connected equipment regardless of the power switch setting of the player.

### 1-5. CONNECTIONS

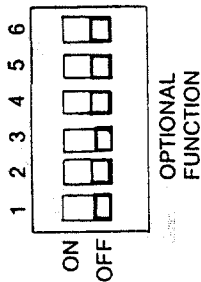
The video monitor which has a BNC video input can be used with LDP-1450. Use a BNC-BNC coaxial cable for video signal connection, and a cable with phono plugs for audio signal connection.



- To play back the audio on a stereo system, connect the LINE OUT connectors to the auxiliary (or tape or tuner) inputs of the amplifier.
- Use the red plug of the audio cable for the right channel (R) connection.

## 1-6. EXTENDED OPERATION MODES

The LDP-1450 is equipped with the OPTIONAL FUNCTION selector at its rear.



The three switches, from 1, 2 and 4, of the OPTIONAL FUNCTION selector enable the use of extended operation modes.

### Notes

- All switches of the OPTIONAL FUNCTION selector are set to the OFF position at the factory. To use an extended operation mode, set the corresponding switch to the ON position.
- Switches 3, 5 and 6 are not used.

### Precaution

Be sure to set the switch while the power is turned off, and then turn on the power. Changing the switch position while the power is turned on does not affect the current operation mode.

TO ENTER STILL OR STOP MODE WHEN POWER IS TURNED ON

Use switch 1 of the OPTIONAL FUNCTION selector.

- 1 Turn the power off, if it is turned on.
- 2 Set switch 1 to ON.
- 3 Turn the power on.

The videodisc player will enter the still mode at the first track of the CAV disc, or the stop mode at the first track of the CLV disc when the power is turned on.

This mode prevents the videodisc player from starting playback automatically. This mode will be convenient in case the host computer needs certain period of time for its initialization, for example.

### Note

This switch is effective whether or not an external computer is connected to the videodisc player.

TO EXECUTE COMMANDS FROM THE COMPUTER WITHOUT RETURNING CODES

Use switch 2 of the OPTIONAL FUNCTION selector.

- 1 Turn the power off, if it is turned on.
- 2 Set switch 2 to ON.
- 3 Turn the power on.

The videodisc player will not return codes in response to the commands sent from the external computer. For the videodisc player in such a state, a simplified control program will do, since no interrupt processing will be required.

### Notes

- Even when switch 2 is set to ON, the videodisc player will return the required information in response to the ADDR INQ, CHAPTER # INQ, ROM VERSION INQ and STATUS INQ commands.
- An interval of at least 33 msec is required between two different commands so that the videodisc player can distinguish a command from the preceding one.

## TO USE THE REMOTE CONTROL UNIT WHILE THE VIDEO DISC PLAYER IS CONTROLLED BY AN EXTERNAL COMPUTER

In the standard operation mode, the videodisc player does not accept the signal from the remote control unit when it is controlled by an external computer. However, you can make the player accept the remote control unit signal while it is under the control of external computer.

Use switch 4 of the OPTIONAL FUNCTION selector.

- 1 Turn the power off, if it is turned on.
- 2 Set switch 4 to ON.
- 3 Turn the power on.

### Note

Switch 2 of the OPTIONAL FUNCTION selector should be set to OFF.

In this state, the videodisc player accepts the signal issued by the remote control unit, and returns the code to the external computer. The codes returned correspond to the keys on the remote control unit pressed as follows:

Key pressed	Code returned	Key pressed	Code returned
0	10H	REV SCAN	1FH
1	11H	FWD SCAN	20H
2	12H	REV PLAY	21H
3	13H	FWD FAST	22H
4	14H	REV FAST	23H
5	15H	FWD STEP	24H
6	16H	REV STEP	25H
7	17H	ENTER	26H
8	18H	CL	27H
9	19H	MODE	28H
INDEX	1AH	REPEAT	29H
CH1	1BH	SEARCH	2AH
CH2	1CH	SKIP	2BH
STOP	1DH	MENU	2CH
PLAY	1EH		

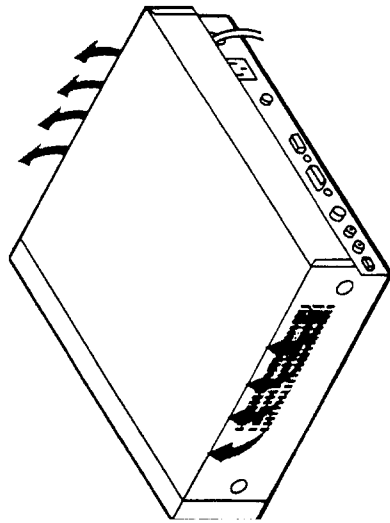
### Note

Pressing a key on the remote control unit does not cause immediately the corresponding operation of the player. The player simply returns the code listed above. For example, pressing the PLAY key does not start playback, but the player will return the code 1EH to the computer. A control program should be prepared so that the player starts playback when the computer receives the code 1EH from the player.

## 1-7. NOTE ON INSTALLING THE PLAYER IN A RACK

When the videodisc player(s) is(are) installed in a rack, special consideration should be taken to prevent internal heat buildup.

Ventilation holes on the LDP-1450

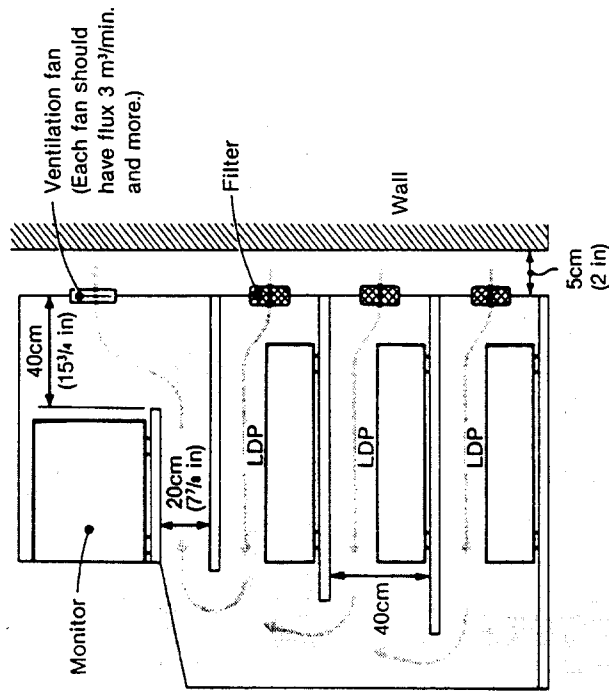


- The air in the rack should be circulated from the bottom to the top as indicated.
- The temperature in the rack should not be over 35°C (95°F).
- Allow at least 5 cm (2 inches) behind the rack when installing it against the wall.
- The distance between each shelf should be at least 40 cm (15<sup>3</sup>/<sub>4</sub> inches).
- The holes located at the back of the rack should have filters to prevent dust from being drawn into the rack.
- At least two ventilation fans should be used and should be installed in the back of the rack as indicated in the figure.
- If a monitor is installed in the same rack, care should be taken to prevent the heat from the monitor affecting the players.

### Recommended ventilation when installed in a standard 19" rack

- Use the optional RMM-121 rack mount kit to install the player(s) in a standard 19" rack.
- Three ventilation fans with flux 3 m<sup>3</sup>/min should be used for five players installed in a standard 19" rack. If you have any questions regarding ventilation in a rack, consult your authorized Sony representative.

### Recommended ventilation when installed in a closed rack



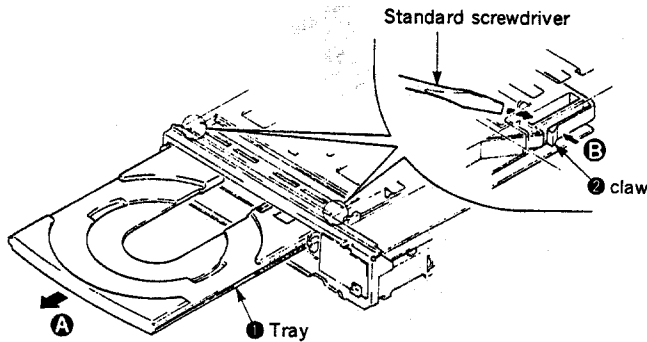
### Note

When the player is used in a dusty place, powdery dust will be drawn in the player and contaminate the objective lens in the optical pick-up system. Ask your nearest Sony service facility for lens cleaning.

## SECTION 2 DISASSEMBLY

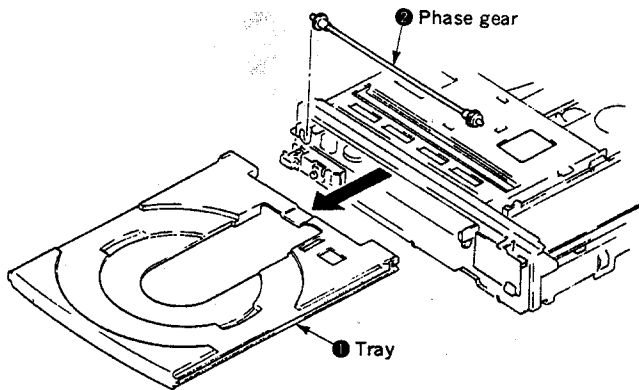
### 2-1. REMOVAL OF TRAY AND CHUCK ARM. . . (1)

- 1) Turn on power supply and set to eject state.  
\*When not ejecting, see "2-4. METHOD TO EJECT MANUALLY".
- 2) Insert a standard screwdriver, etc. into the left and right notch section as shown in Fig. and remove the claw ② of tray in the direction of arrow ③ while pulling the tray ① in the direction of arrow ④.



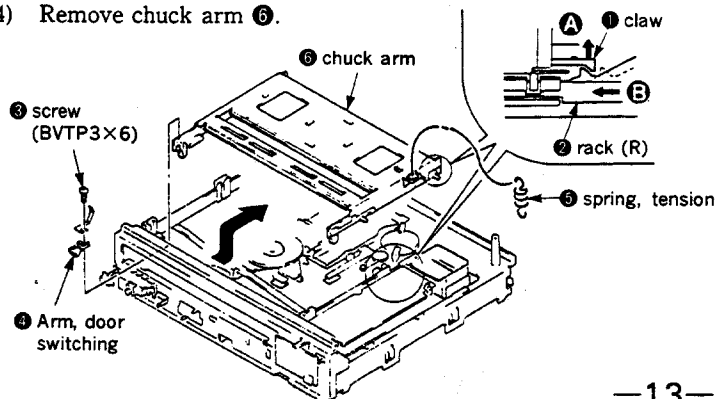
### 2-2. REMOVAL OF TRAY AND CHUCK ARM. . . (2)

- 1) Remove the tray ① and then remove the phase gear ②.



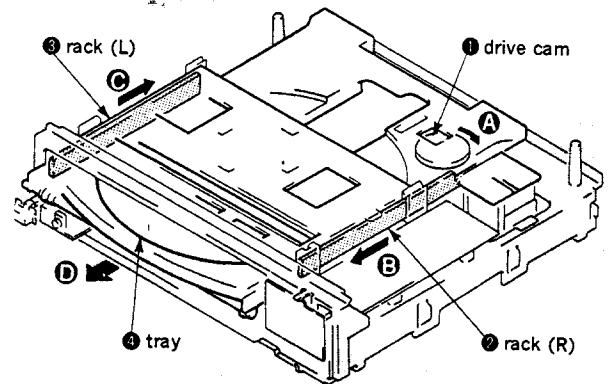
### 2-3. REMOVAL OF TRAY AND CHUCK ARM. . . (3)

- 1) While pushing the claw ① in the direction of arrow ④, move the rack (R) ② in the direction of arrow ③ so that it is positioned to where it is shown in Fig.
- 2) Remove screw ⑤ and remove arm, door switching ④.
- 3) Remove spring tension ⑥.
- 4) Remove chuck arm ⑦.



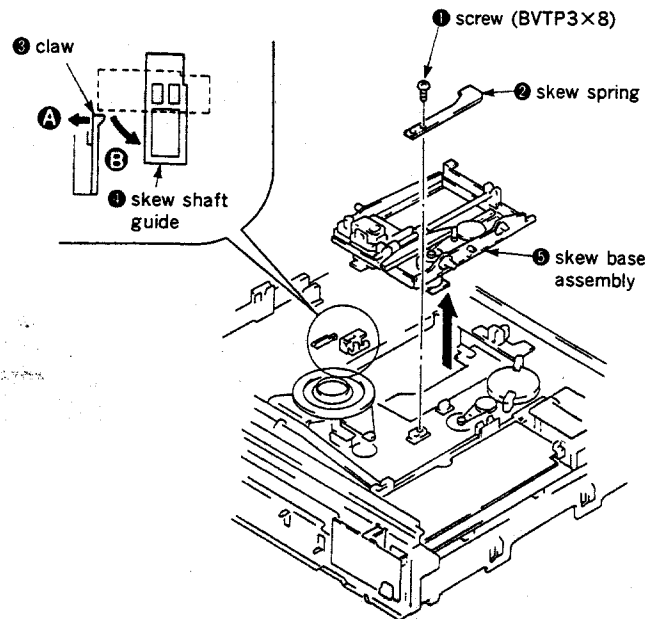
### 2-4. METHOD TO EJECT MANUALLY

- 1) Rotate drive cam ① in the direction of arrow ④ until rack (R) ② begins to move.
- 2) Move rack (R) ② and rack (L) ③ respectively in the directions of arrows ⑤ and ⑥ simultaneously and lift up tray ④.
- 3) Pull out tray ④ in the direction of arrow ⑦.



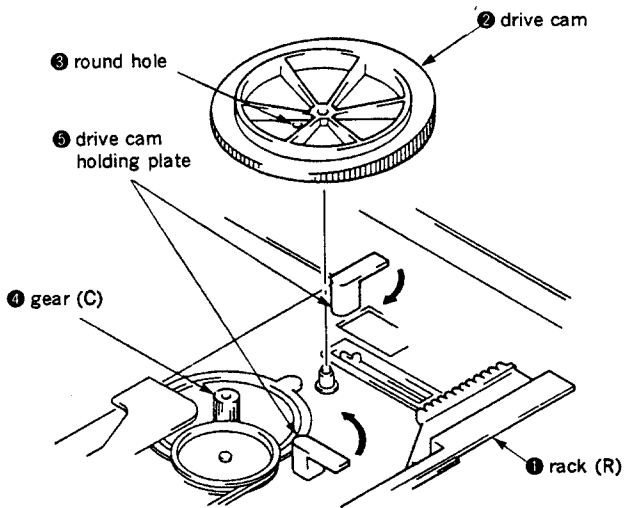
### 2-5. REMOVAL OF SKEW BASE ASSEMBLY

- 1) Remove screw ① and remove skew spring ②.
- 2) Rotate skew shaft guide ④ in the direction of arrow ⑤ while pushing the claw ③ in the direction of arrow ⑥.
- 3) Remove skew base assembly ⑤.



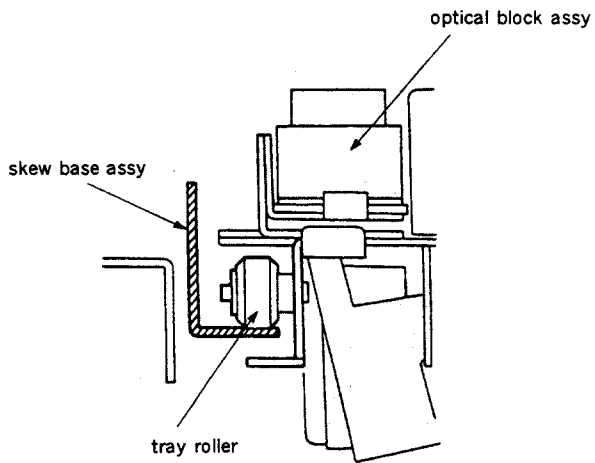
## 2-6. INSTALLATION OF DRIVE CAM

- 1) Confirm that the rack (R) ① has been slid until it contacts the rear side.
- 2) Install by setting the round hole ③ of the drive cam ② to face the front side and by engaging it to the gear (C) ④.
- 3) Rotate the two drive cam holding plates ⑤ to the respective directions of arrow and secure the drive cam ②.



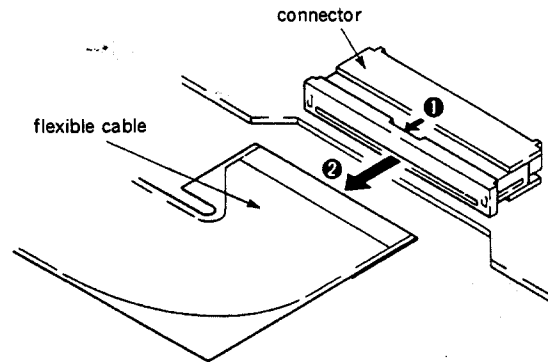
### <Caution on Optical Block Ass'y Installation>

Be sure to set the tray roller to the skew basw assy correctly, when installing optical block assy.

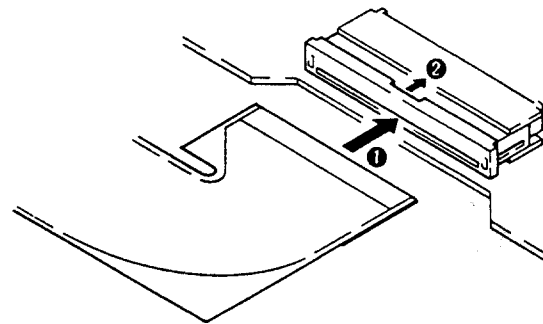


<Normal setting >

Remove or connect the flexible cable of optical block assy from or the connector by sliding it as shown below. The cable may be damaged by the forced handing.

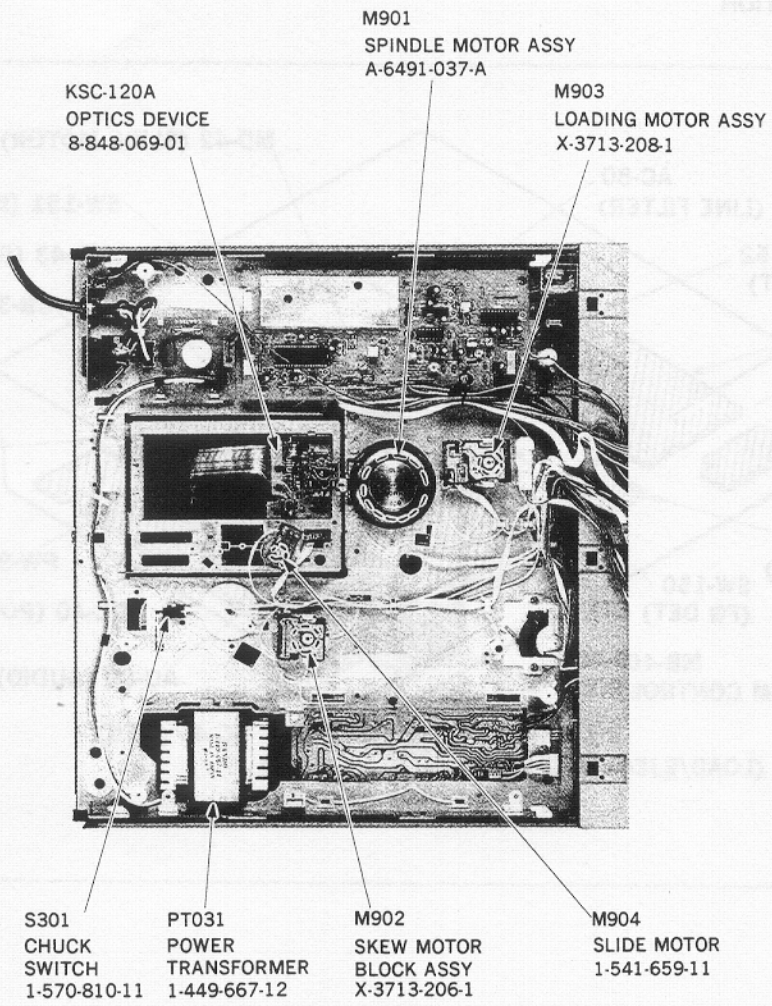


(Removal)



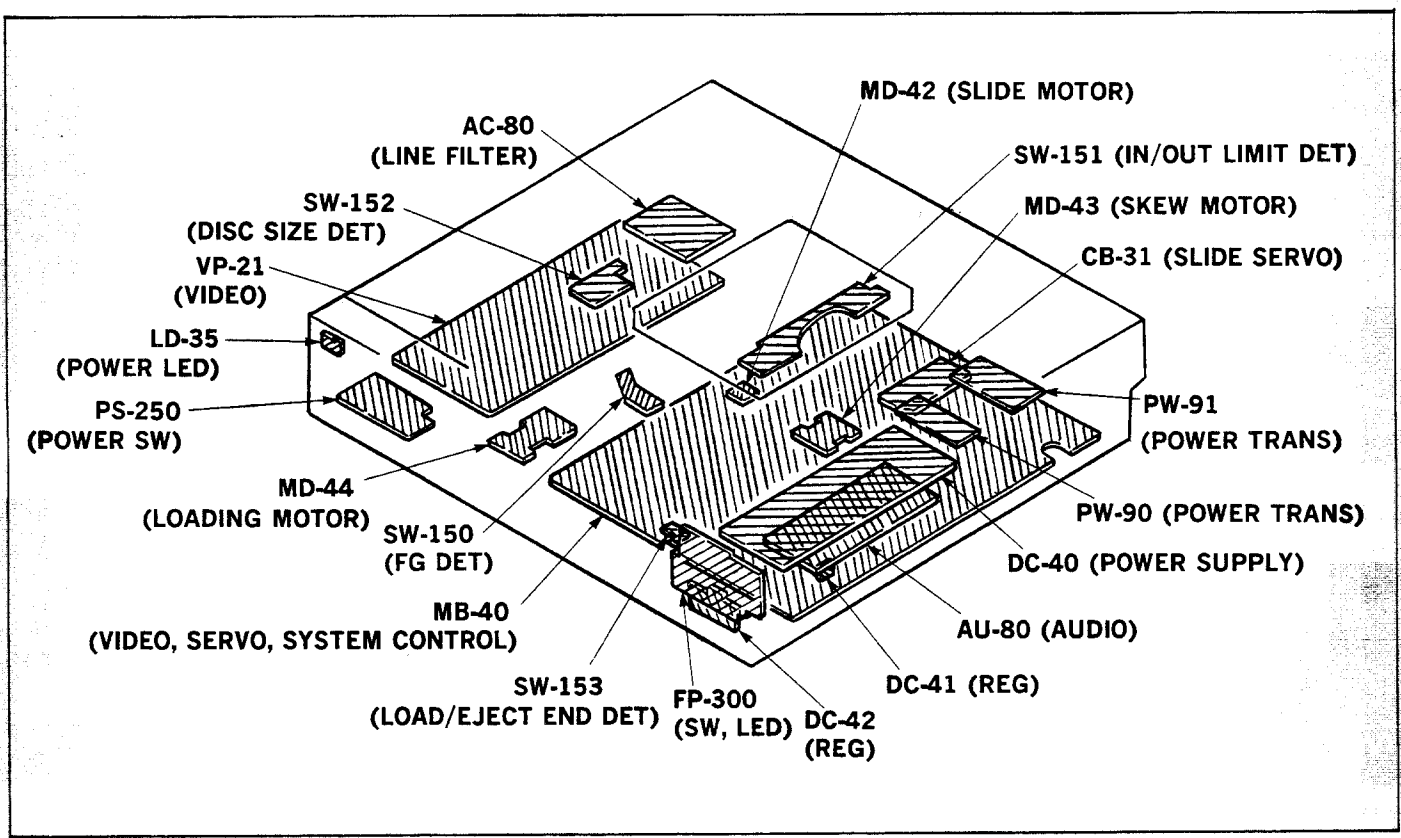
(installation)

2-7. INTERNAL VIEWS

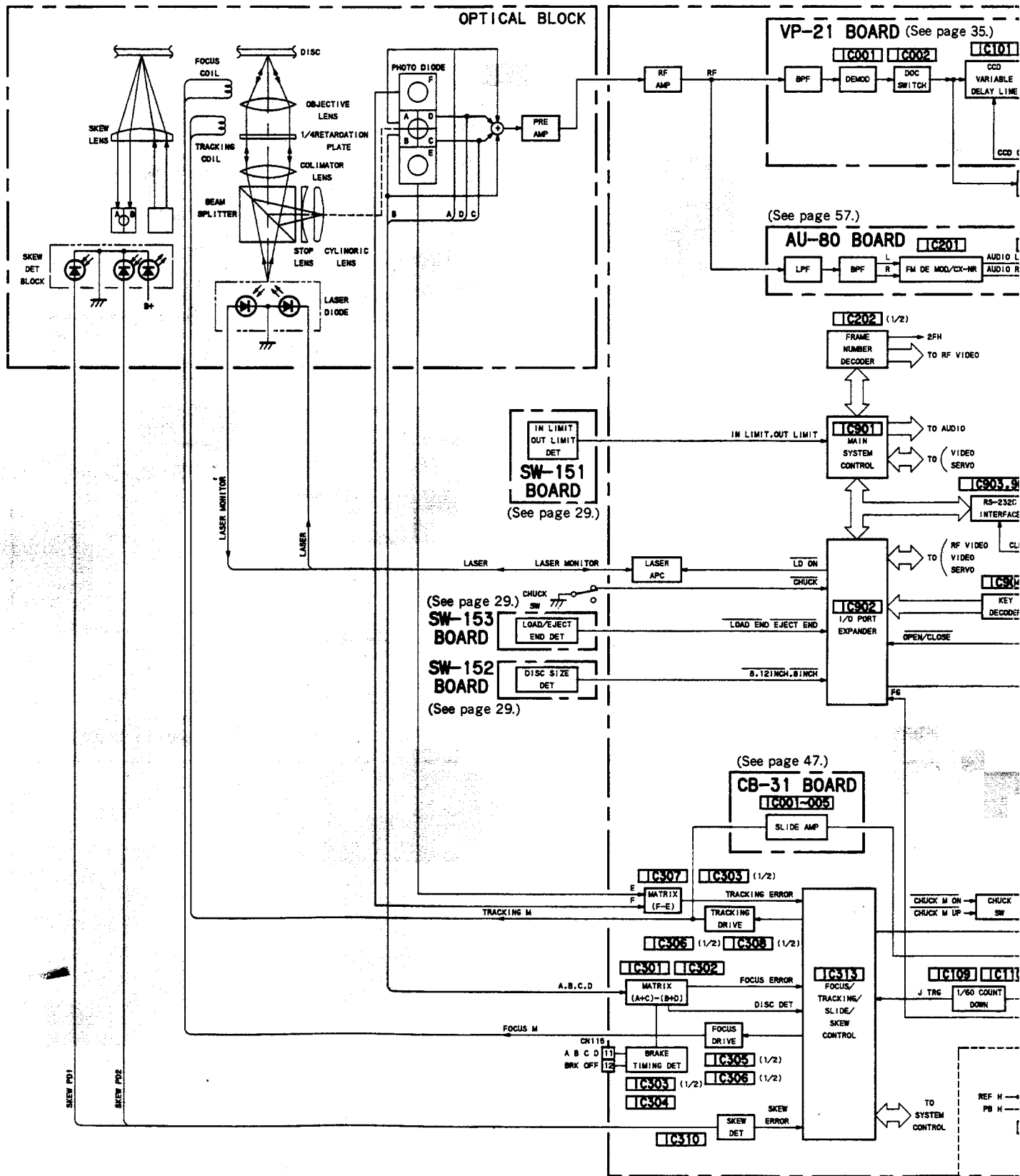


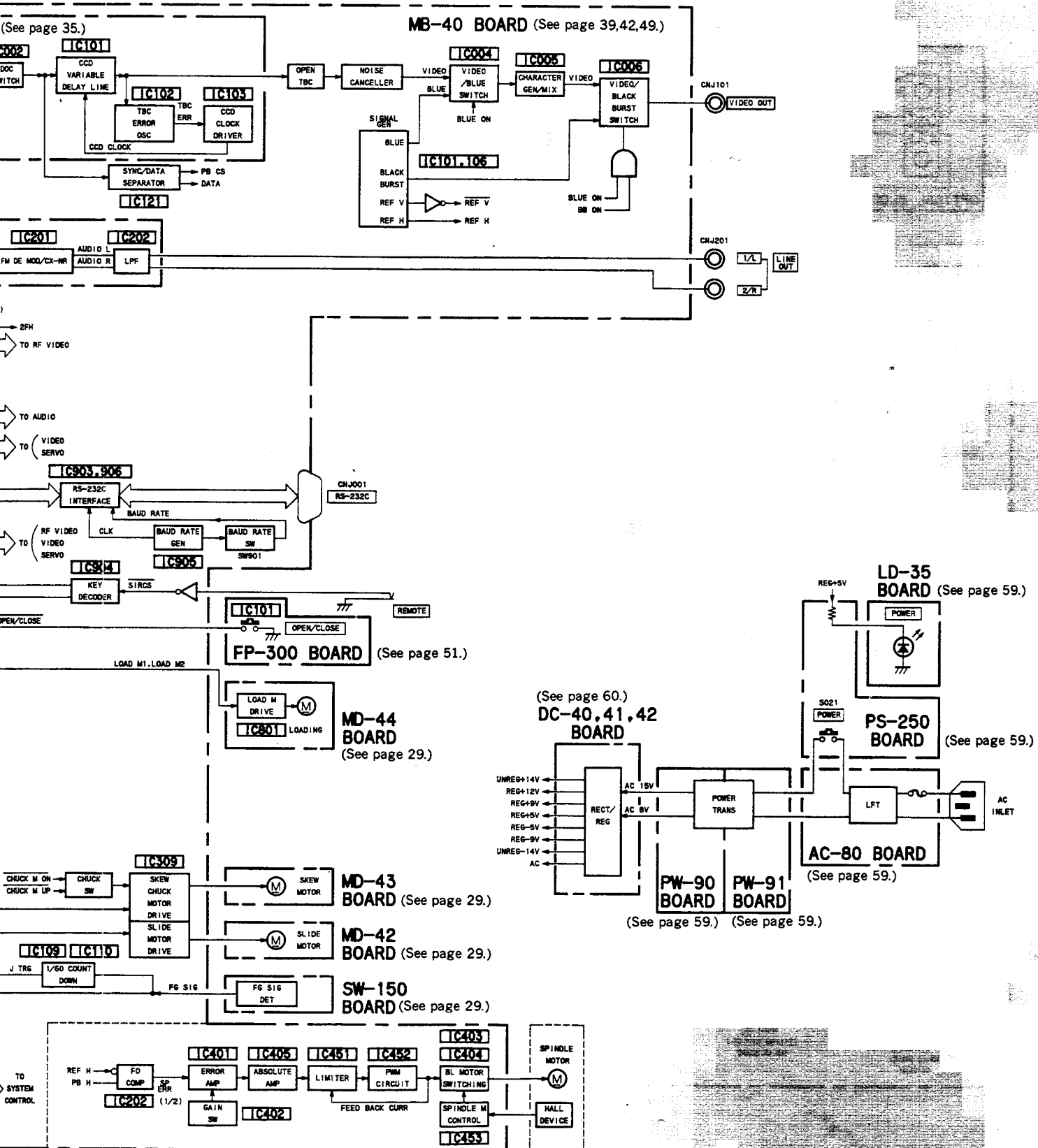
SECTION 3  
DIAGRAMS

3-1. CIRCUIT BOARDS LOCATION

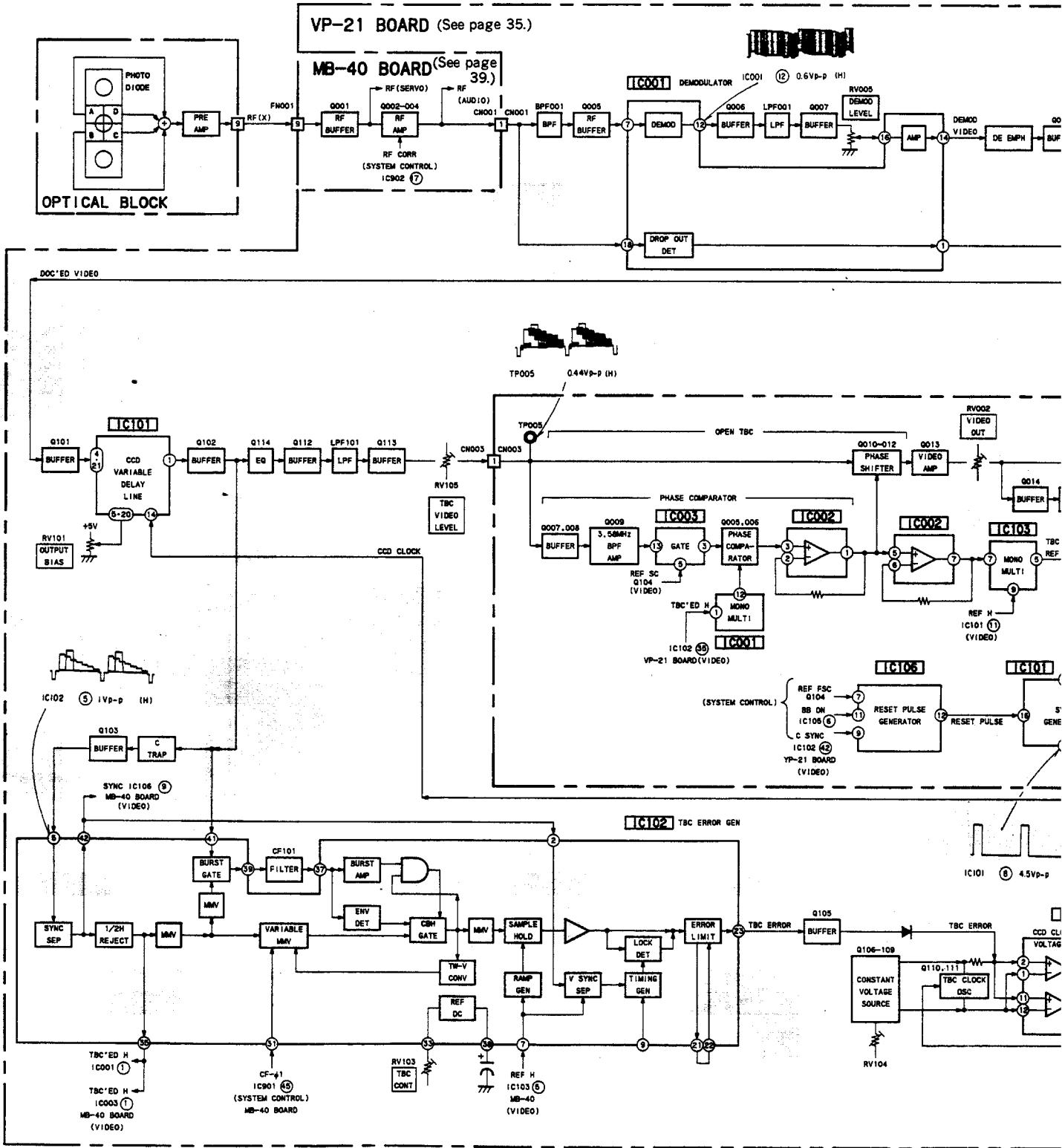


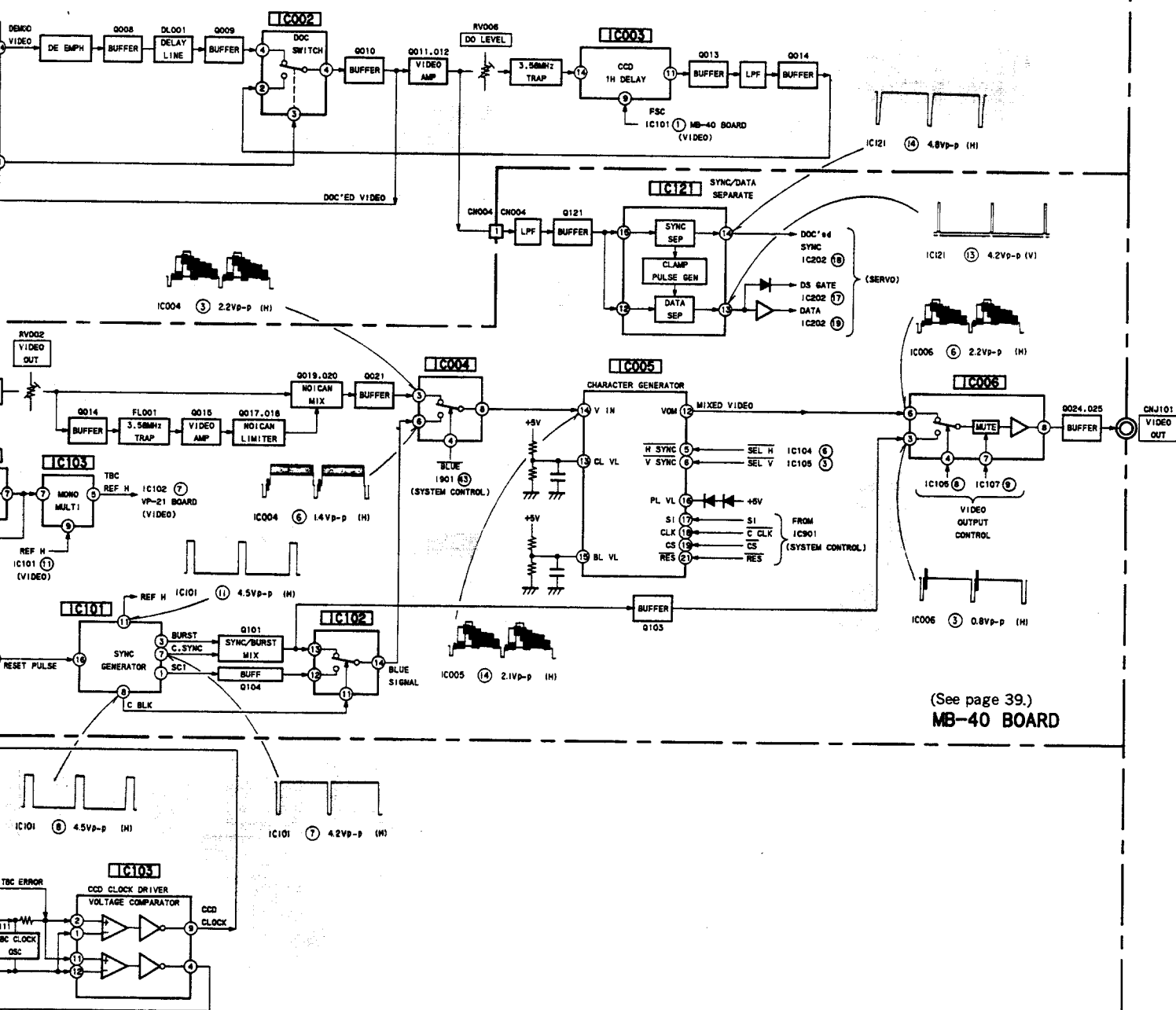






## 3-3. VIDEO BLOCK DIAGRAM

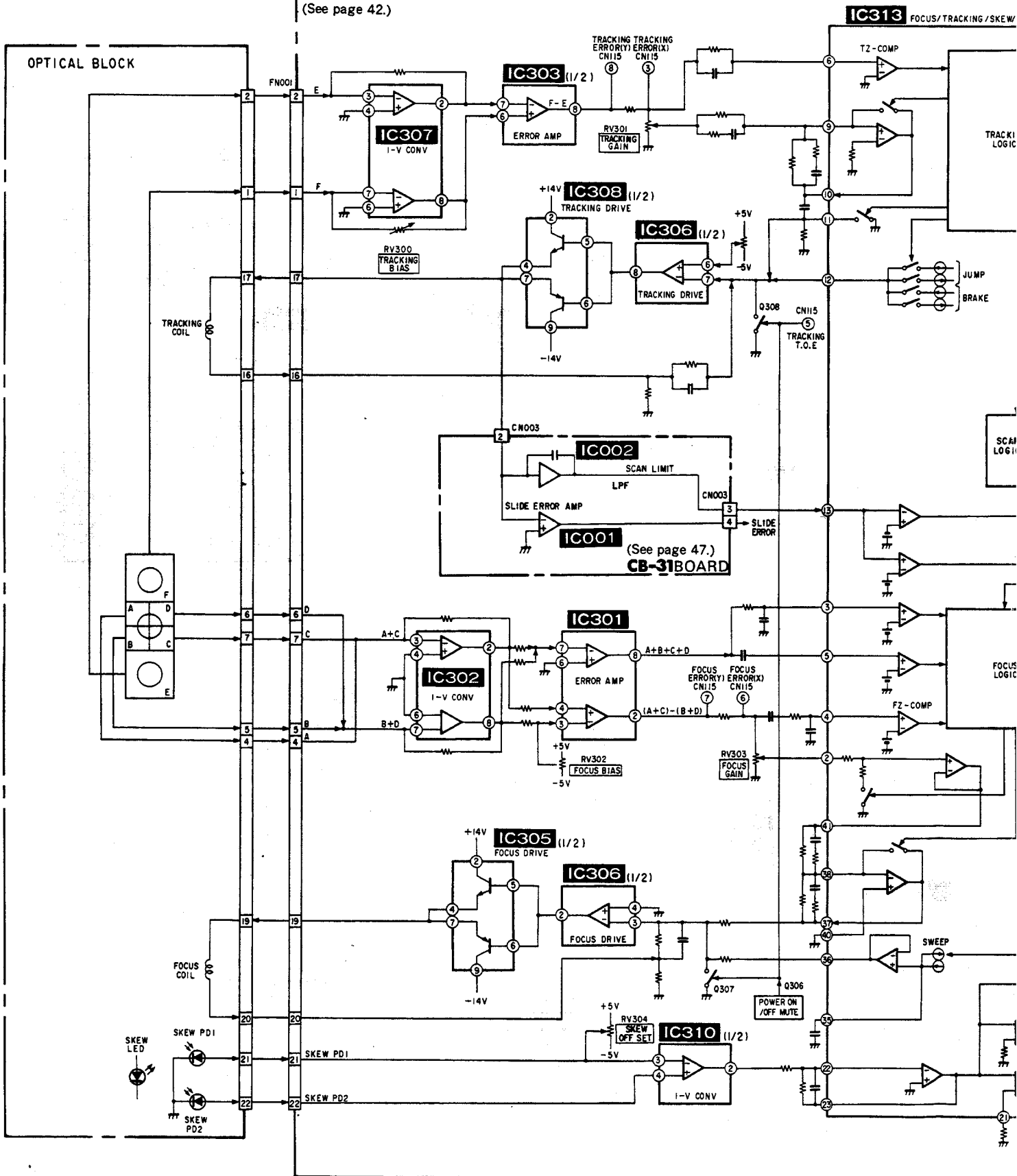


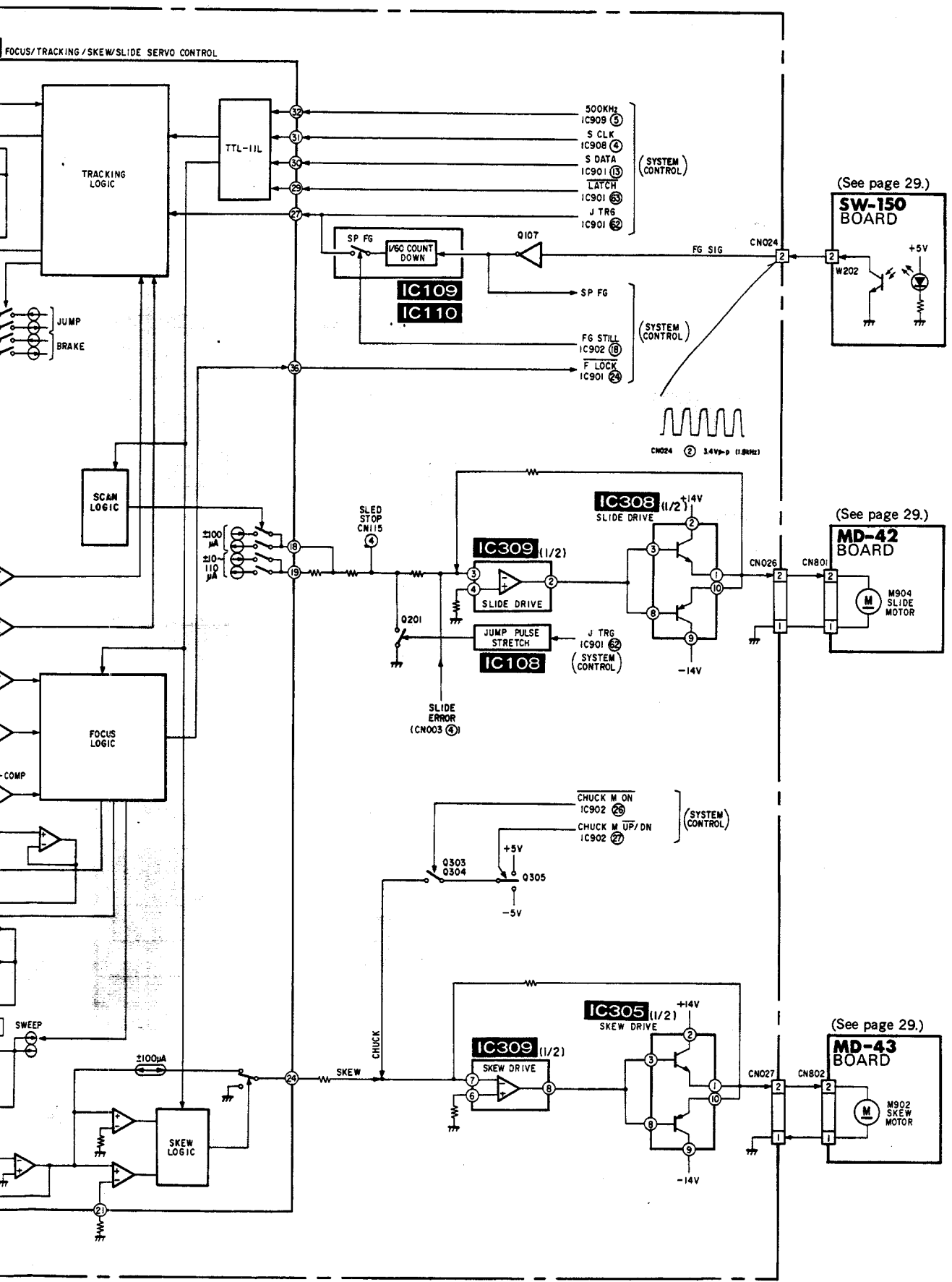


(See page 39.)  
MB-40 BOARD

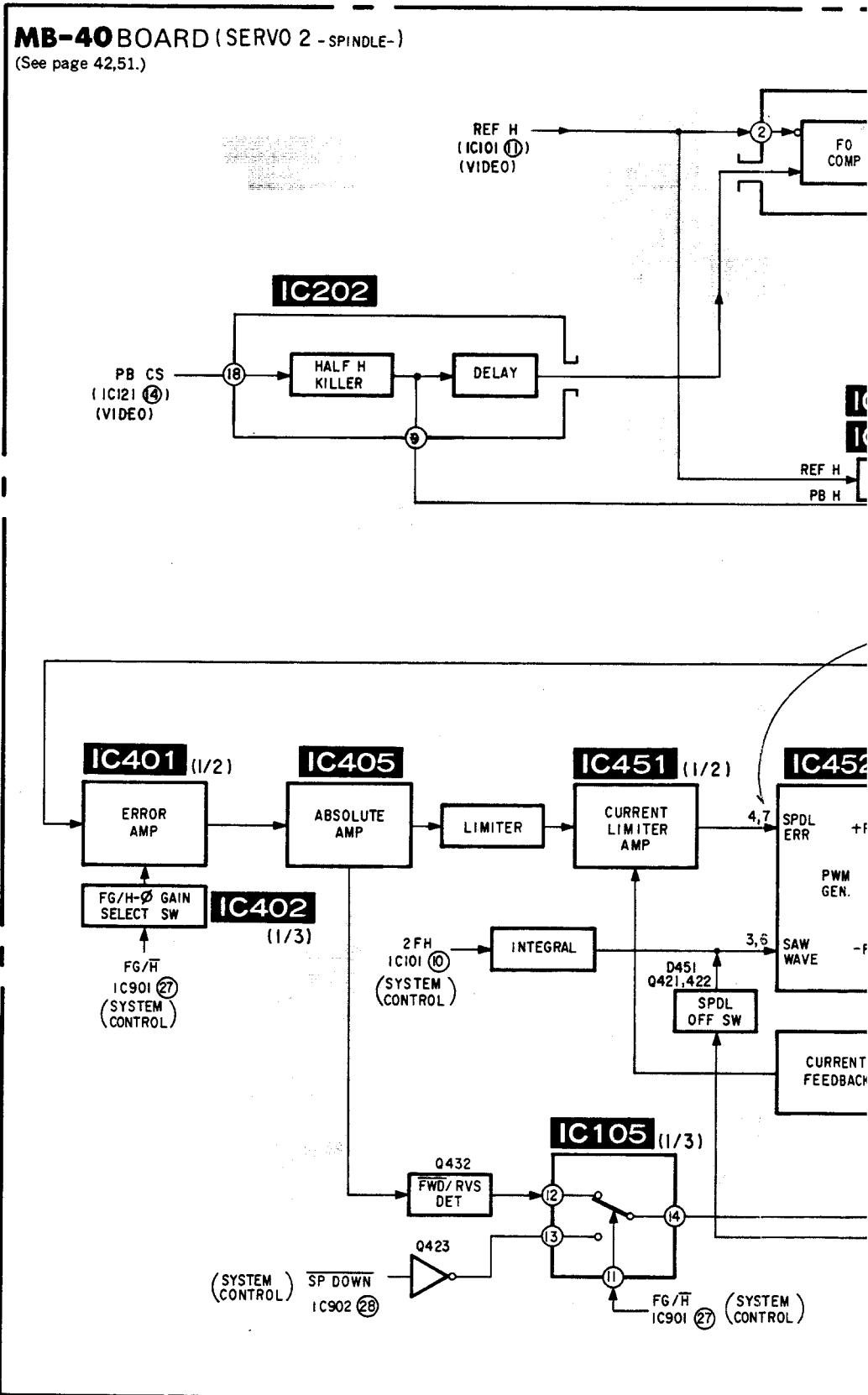
3-4. SERVO 1 BLOCK DIAGRAM

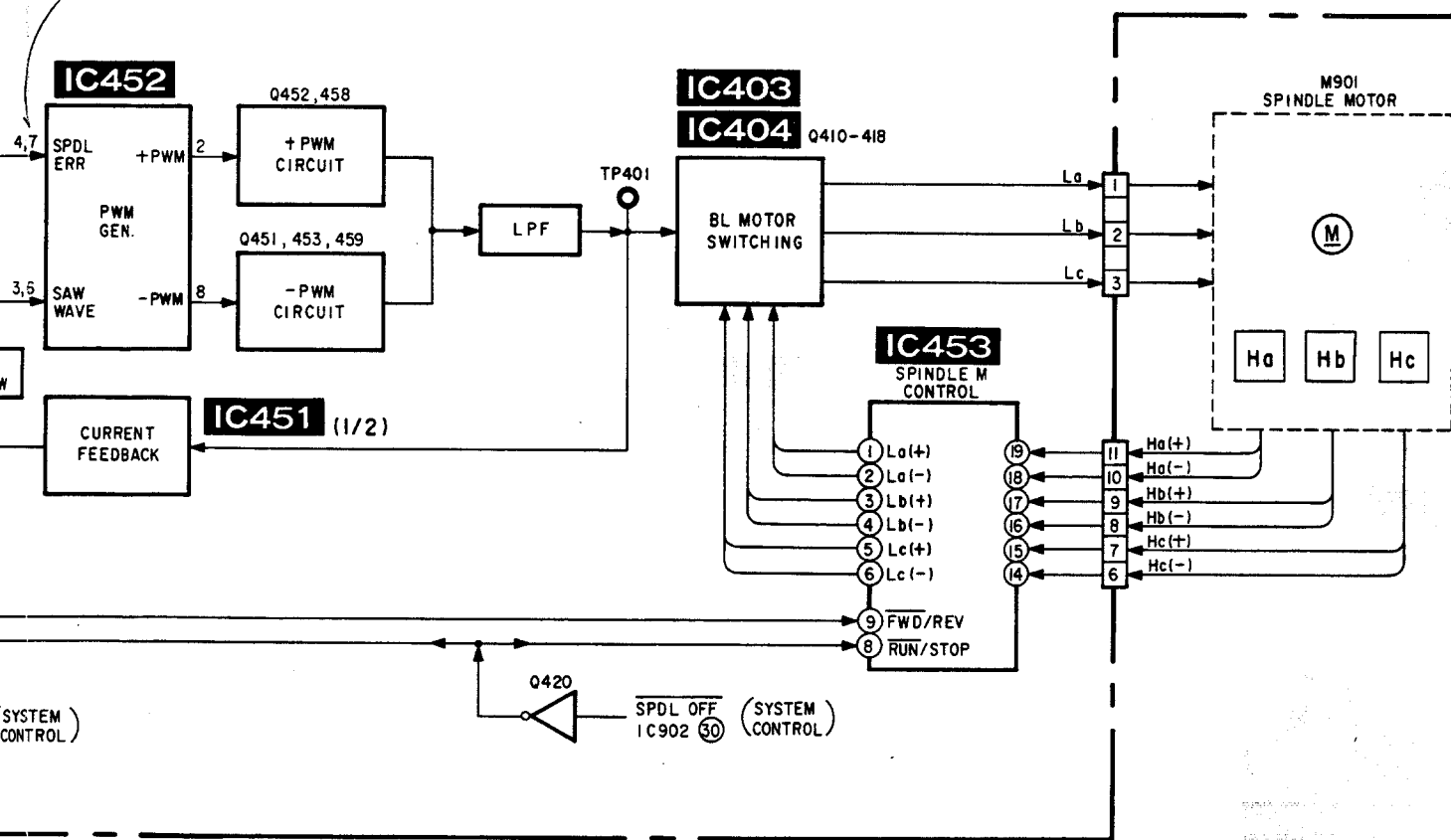
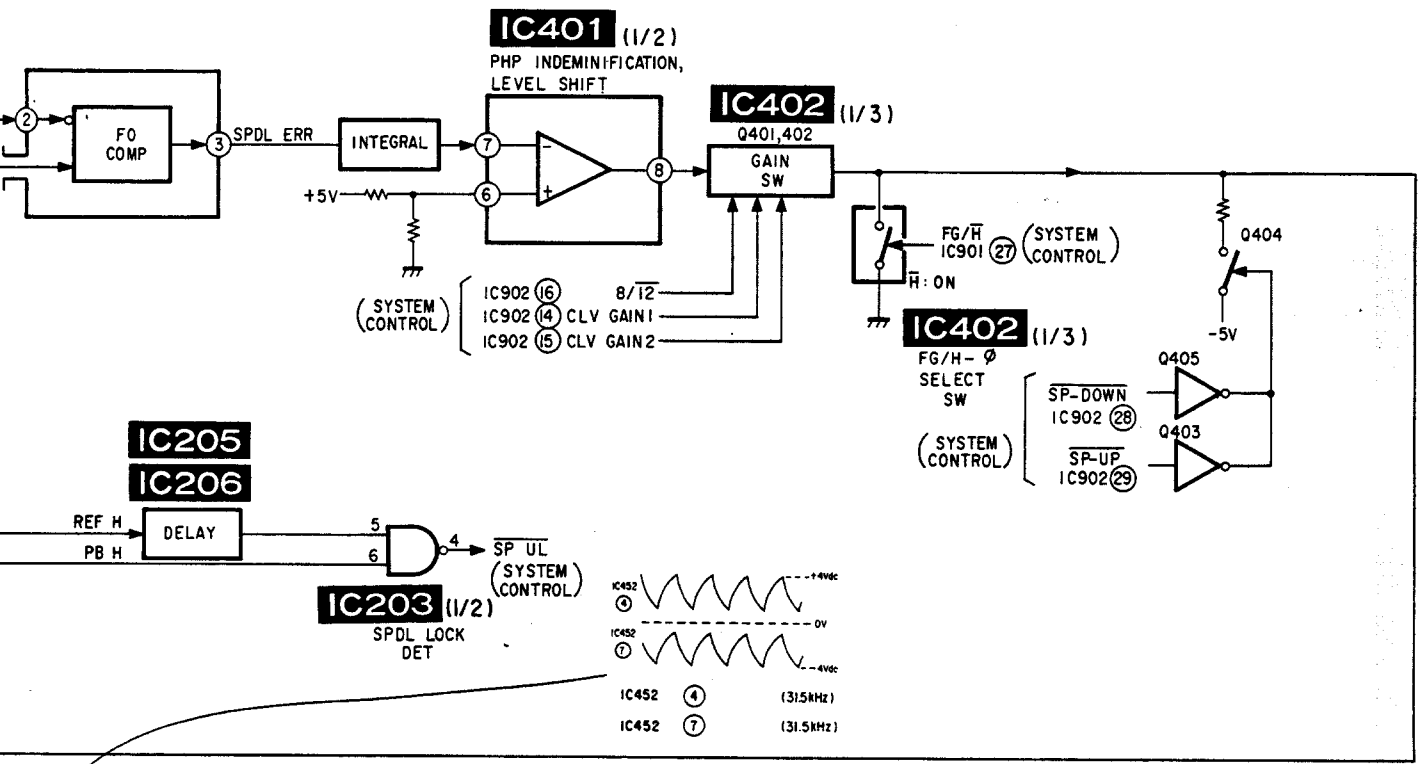
**MB-40BOARD** (SERVO 1- FOCUS/TRACKING/SKEW/SLIDE SERVO)  
(See page 42.)





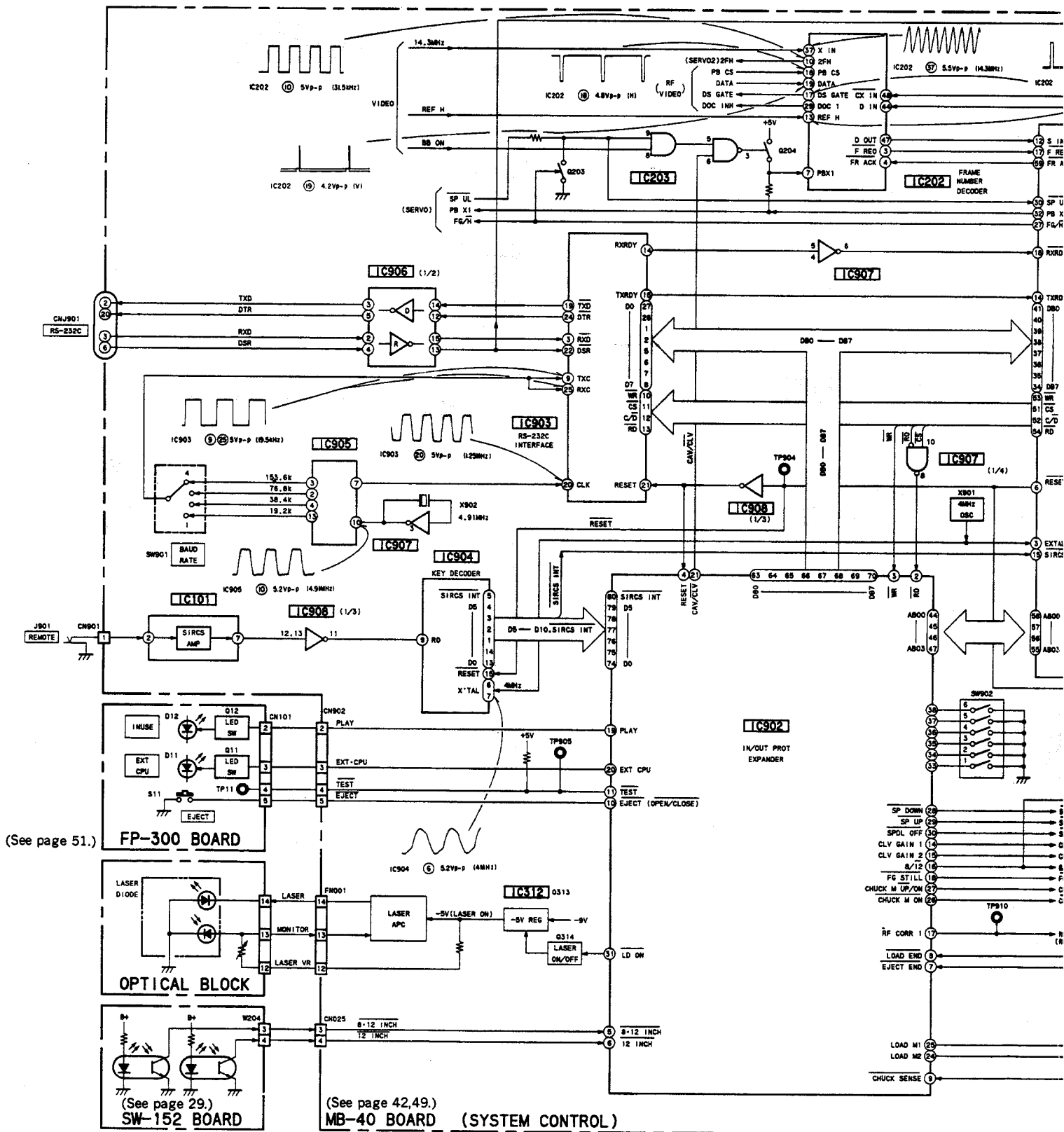
## 3-5. SERVO 2 BLOCK DIAGRAM







3-6. SYSTEM CONTROL BLOCK DIAGRAM



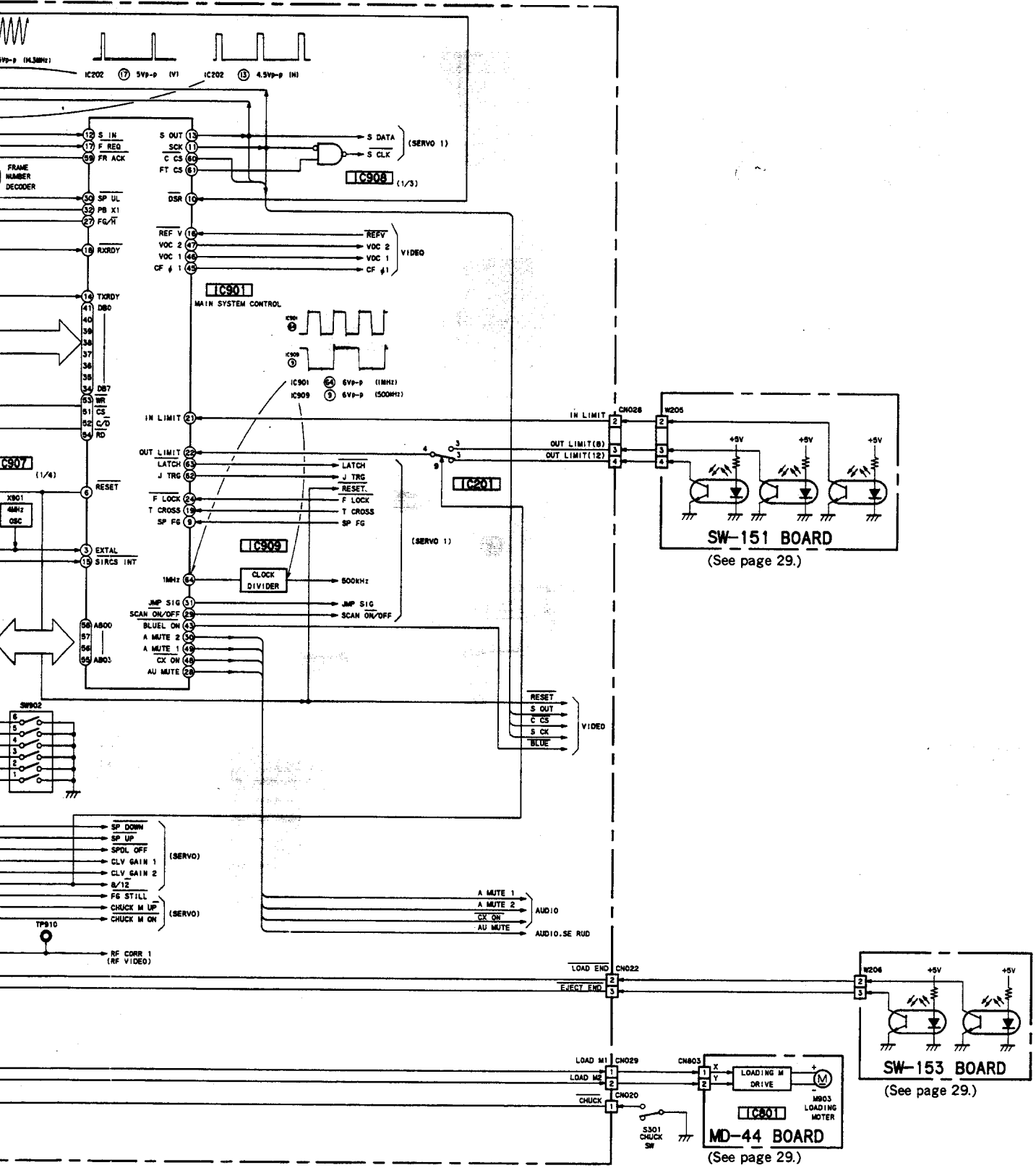
(See page 51.)

**FP-300 BOARD**

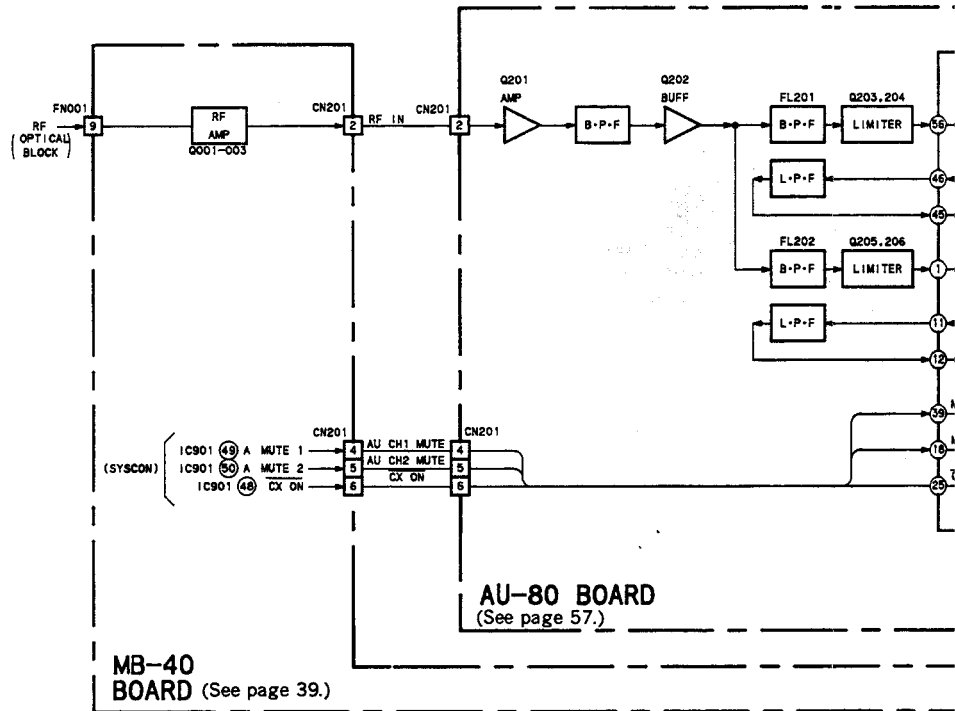
**OPTICAL BLOCK**

(See page 29.)  
**SW-152 BOARD**

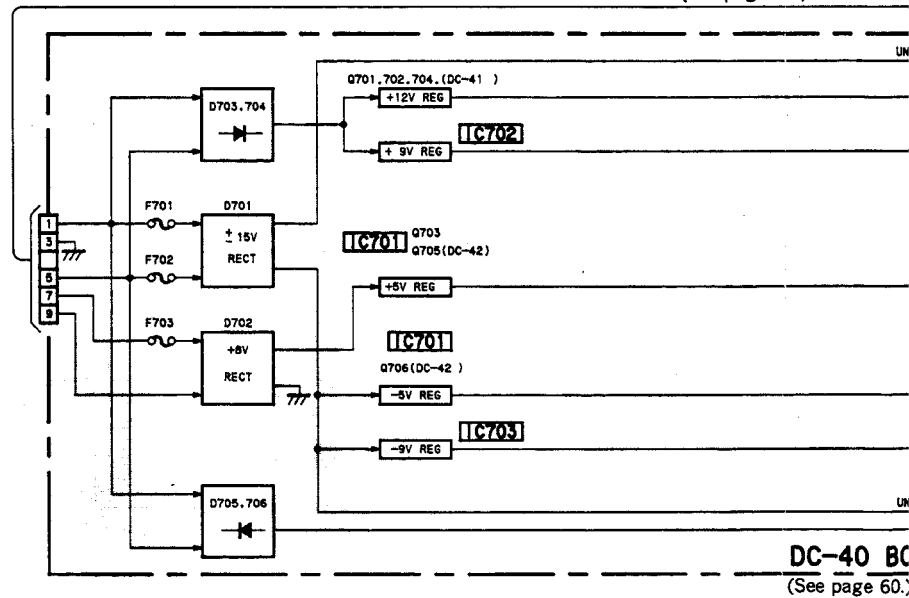
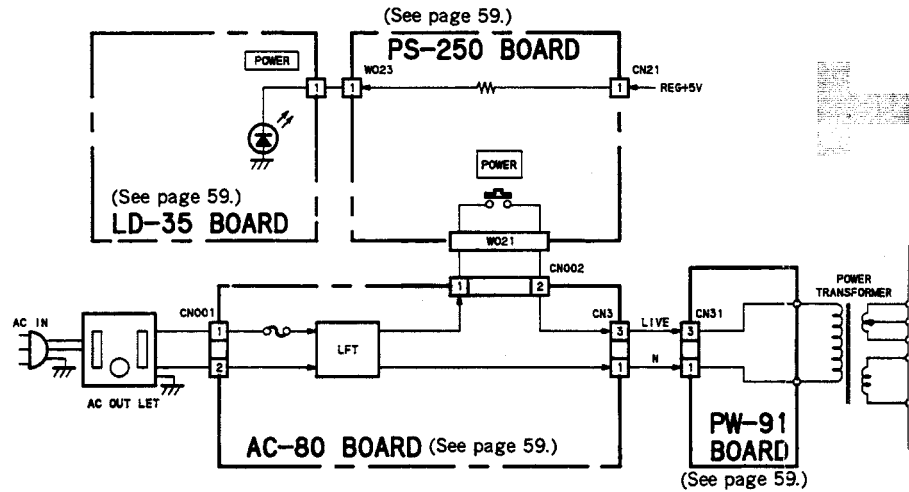
(See page 42.49.)  
**MB-40 BOARD (SYSTEM CONTROL)**

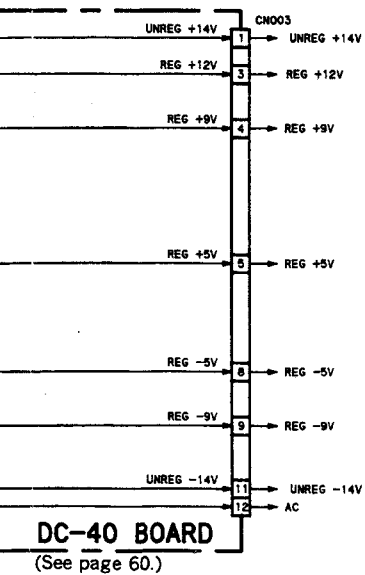
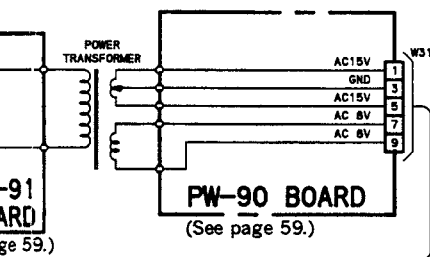
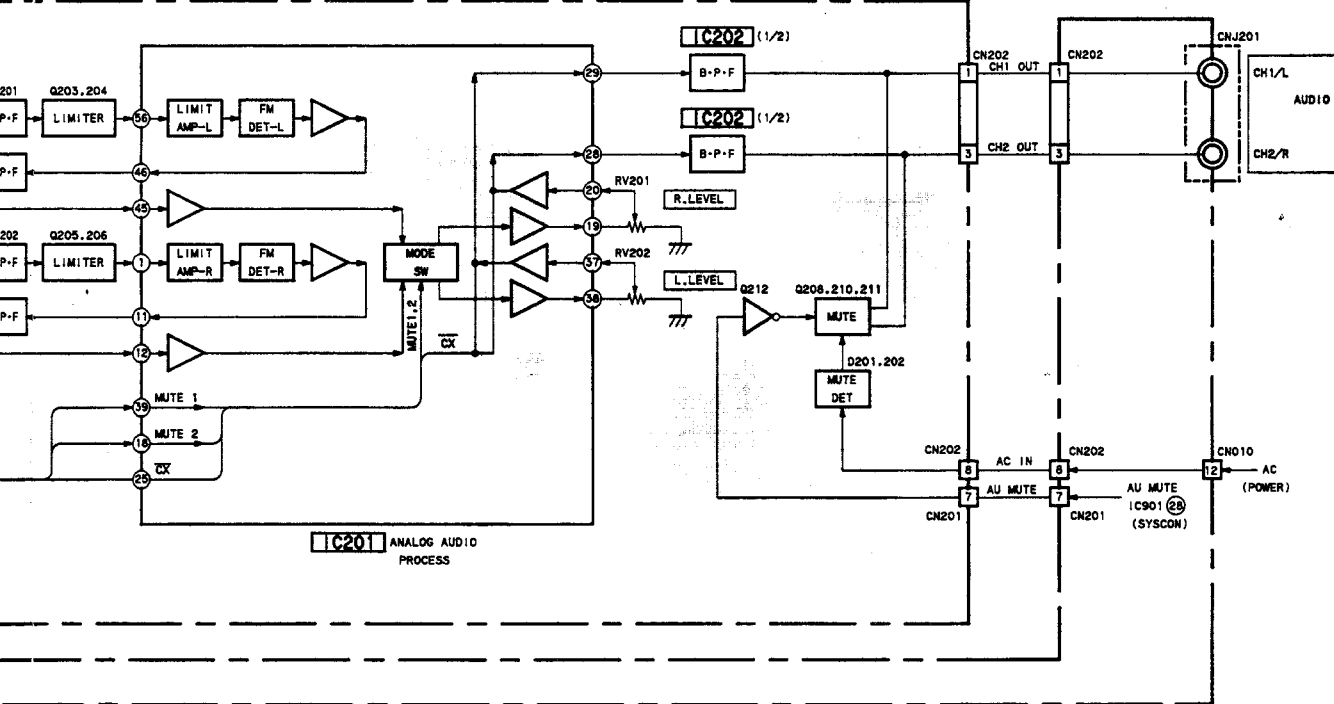


## 3-7. AUDIO BLOCK DIAGRAM

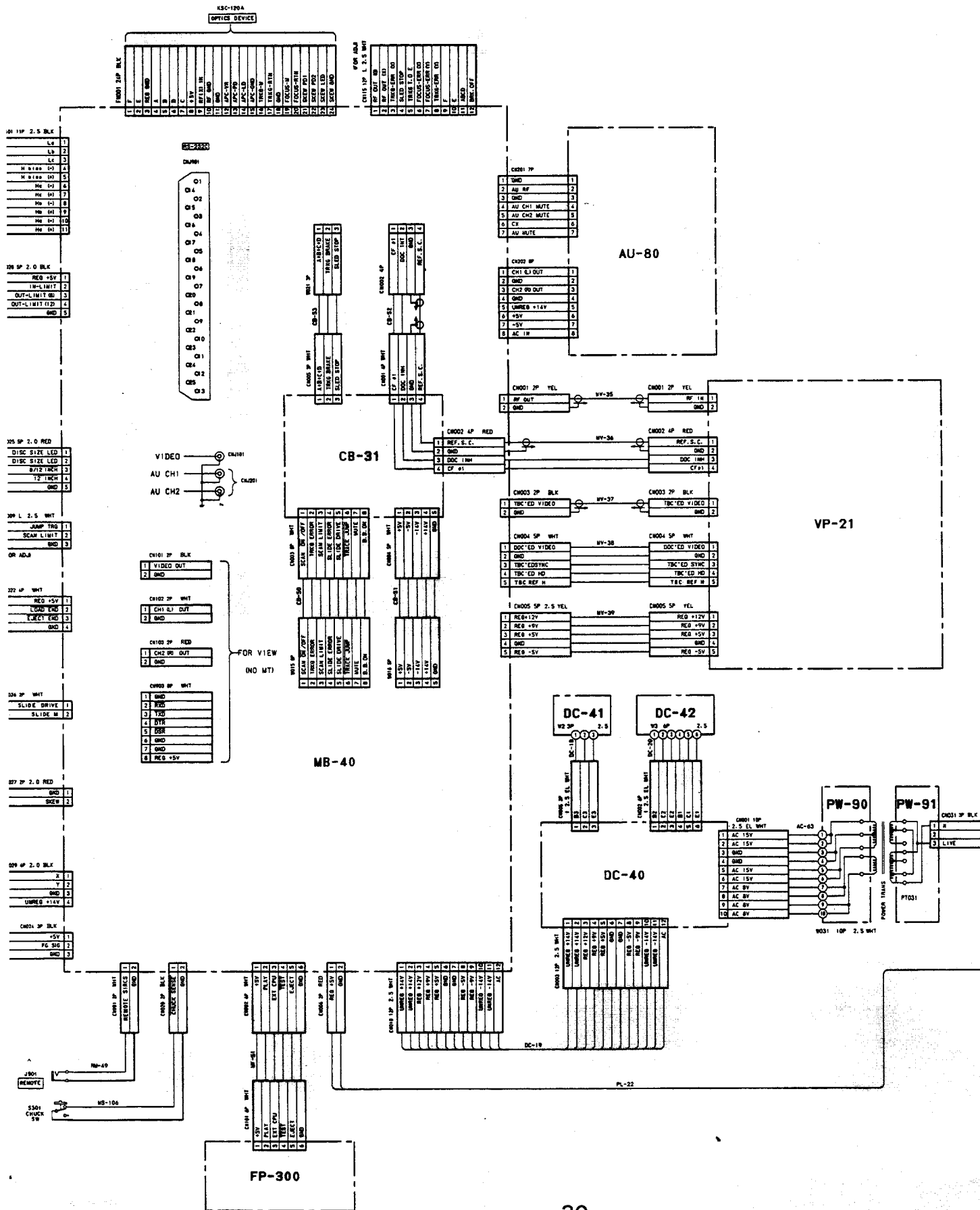


## 3-8. POWER BLOCK DIAGRAM

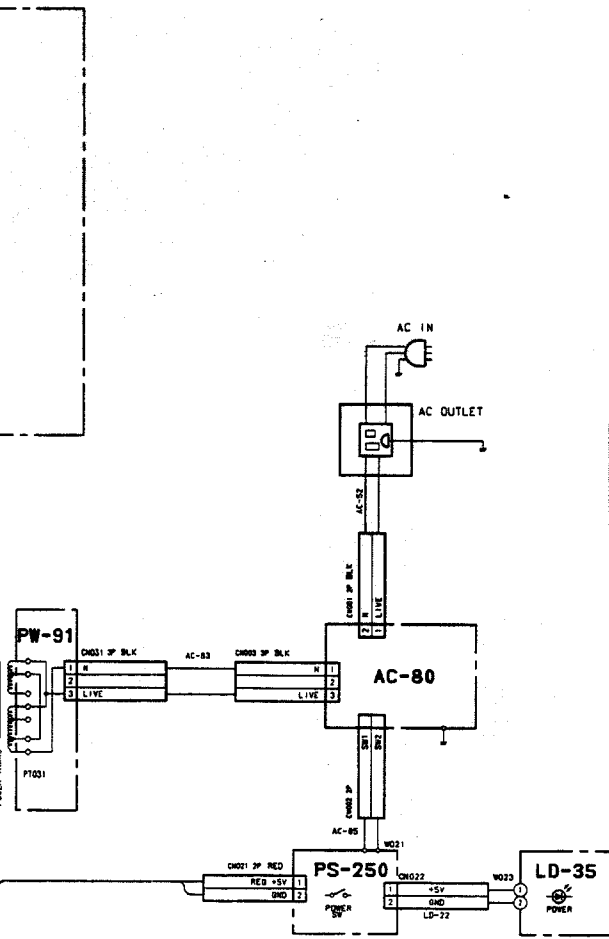









PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAM










## THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.

(In addition to this, the necessary note is printed in each block.)



### ● For printed wiring board

-  : conductor side.
- Circled numbers refer to waveforms.


### ● For schematic diagram

- All resistors are in ohms and 1/4W or less unless otherwise noted.  
k $\Omega$ : 1000 $\Omega$ , M $\Omega$ : 1000k $\Omega$ .
- All capacitors are in  $\mu$ F unless otherwise noted. pF :  $\mu\mu$ F.  
50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
-  : nonflammable resistor.
-  : fusible resistor.
-  : panel designation.
- $\Delta$  : internal component.
-  : adjustment for repair.
-  : B + Line
-  : B - Line.
-  : IN/OUT direction of B (+, -) line.
- Circled numbers refer to waveforms.
- Voltages are dc between ground and measurement points.
- Readings are taken with a playback color-bar signal of standard disc.
- Readings are taken with a digital multimeter (DC10M $\Omega$ ).
- Voltage variations may be noted due to normal production tolerances.

#### Note:

The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

#### Note:

Les composants identifiés par une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

## CAUTION OF SERVICING

- Do not make insertion or ejection of the disc with the set as shown in Fig. A. The disc may be damaged.
- When operates with the state as Fig. A.

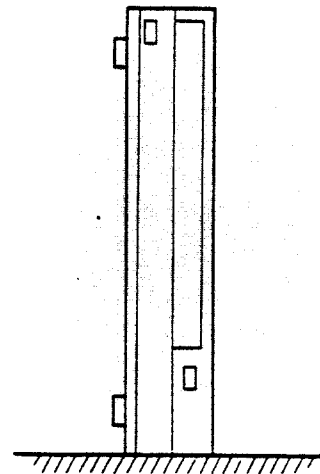
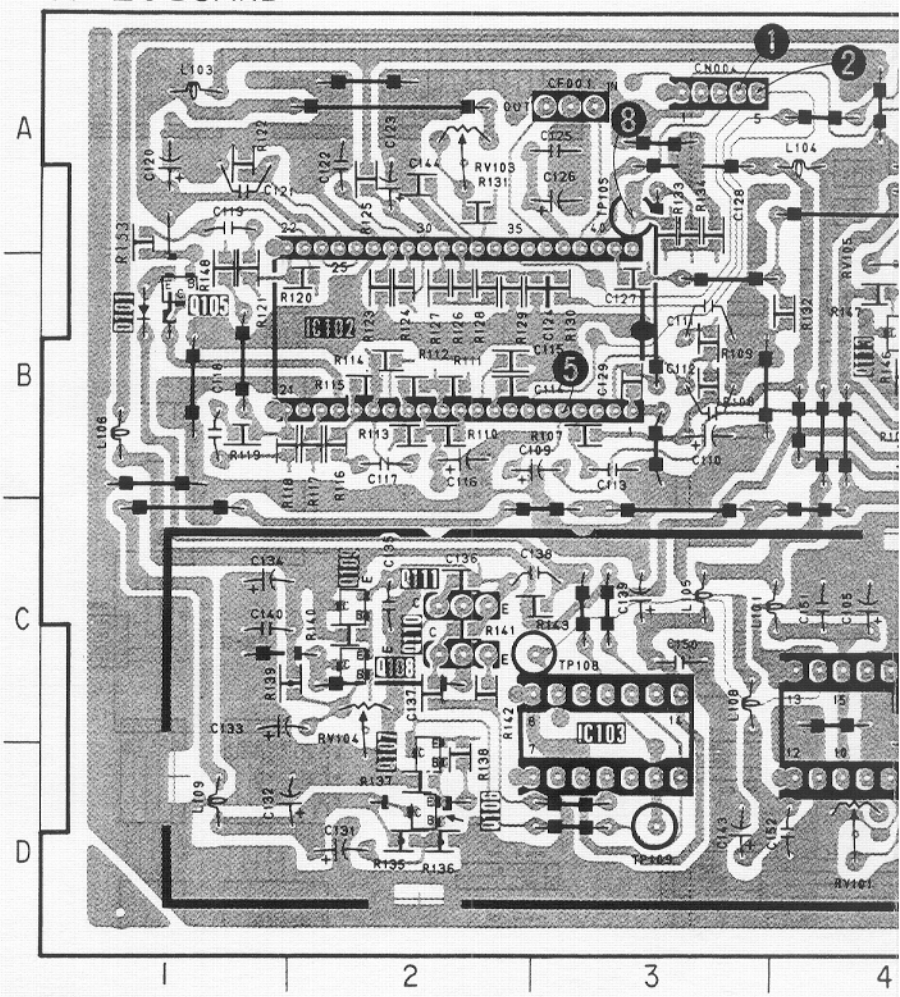


Fig. A.

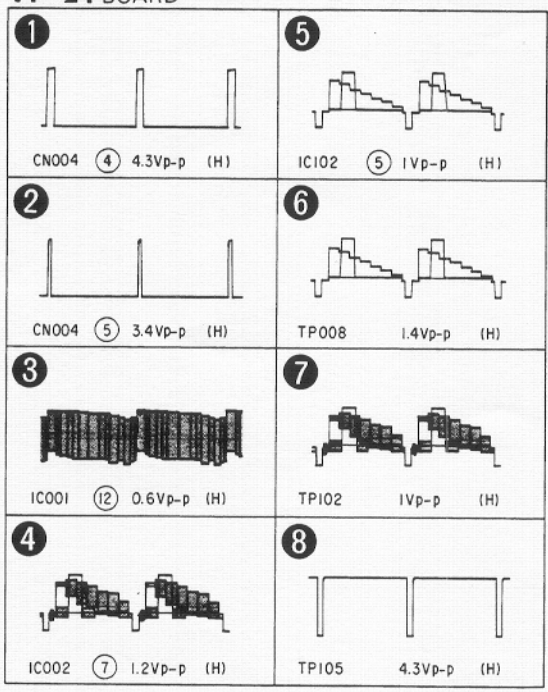


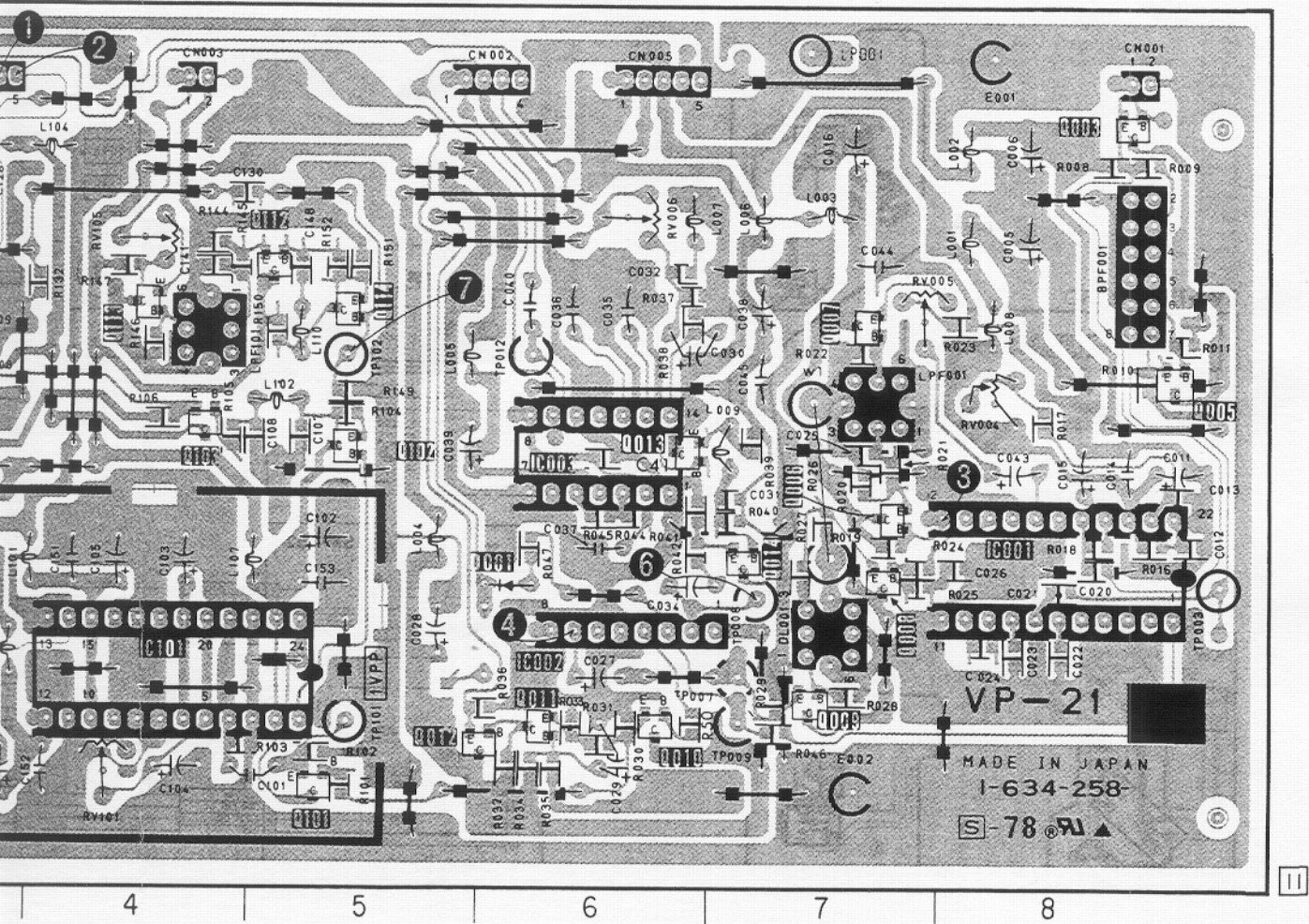
VP-21 BOARD

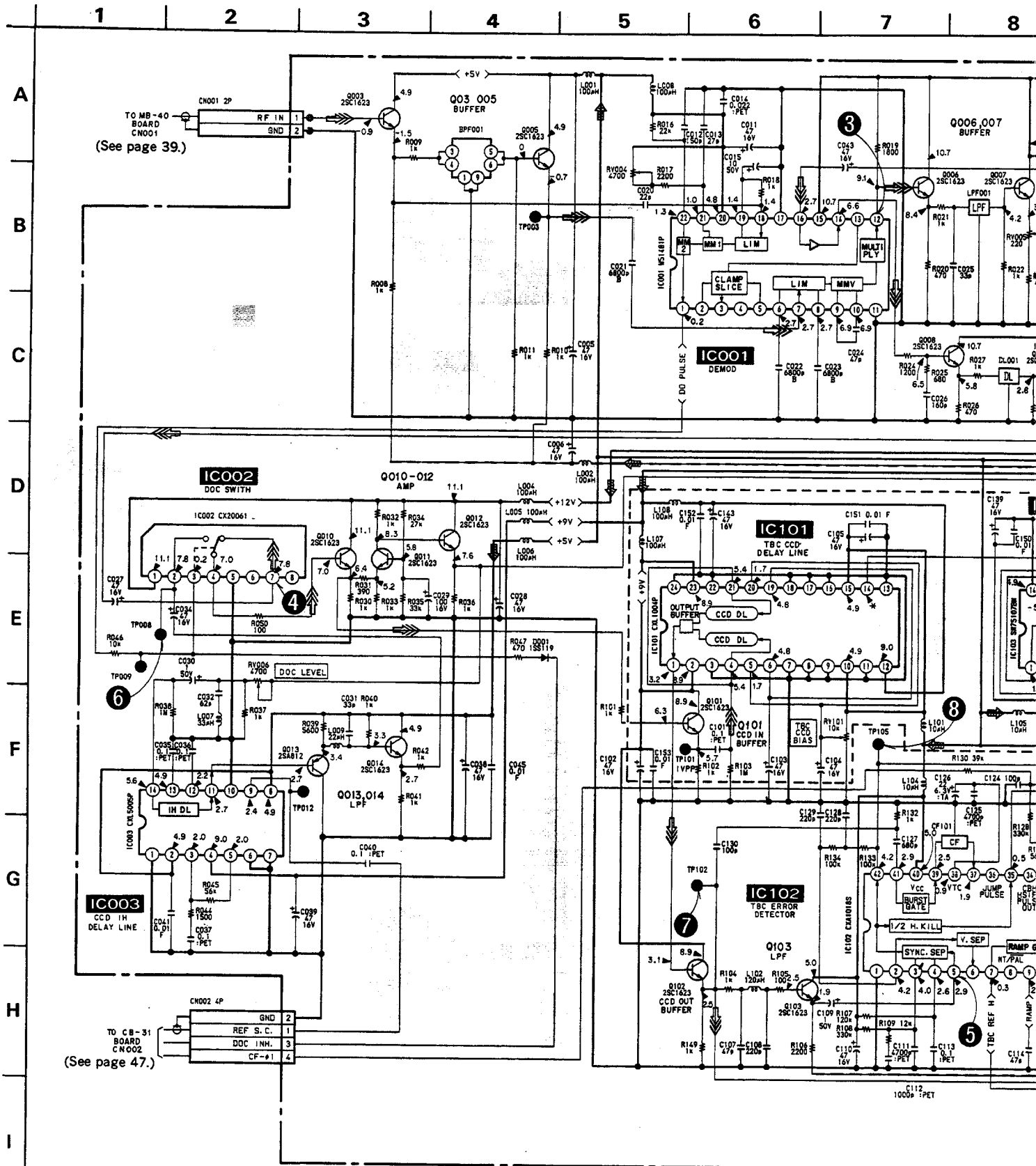
D001	C-6
D101	B-1
IC001	C-8
IC002	C-6
IC003	B-6
IC101	C-4
IC102	B-2
IC103	C-3
Q003	A-8
Q005	B-8
Q006	C-7
Q007	B-7
Q008	C-7
Q009	D-7
Q010	D-6
Q011	D-6
Q012	D-5
Q013	B-6
Q014	C-7
Q101	D-5
Q102	B-5
Q103	B-4
Q105	B-1
Q106	D-2
Q107	D-2
Q108	C-2
Q109	C-2
Q110	C-2
Q111	C-2
Q112	B-5
Q113	B-4
Q114	B-5



VP-21 BOARD



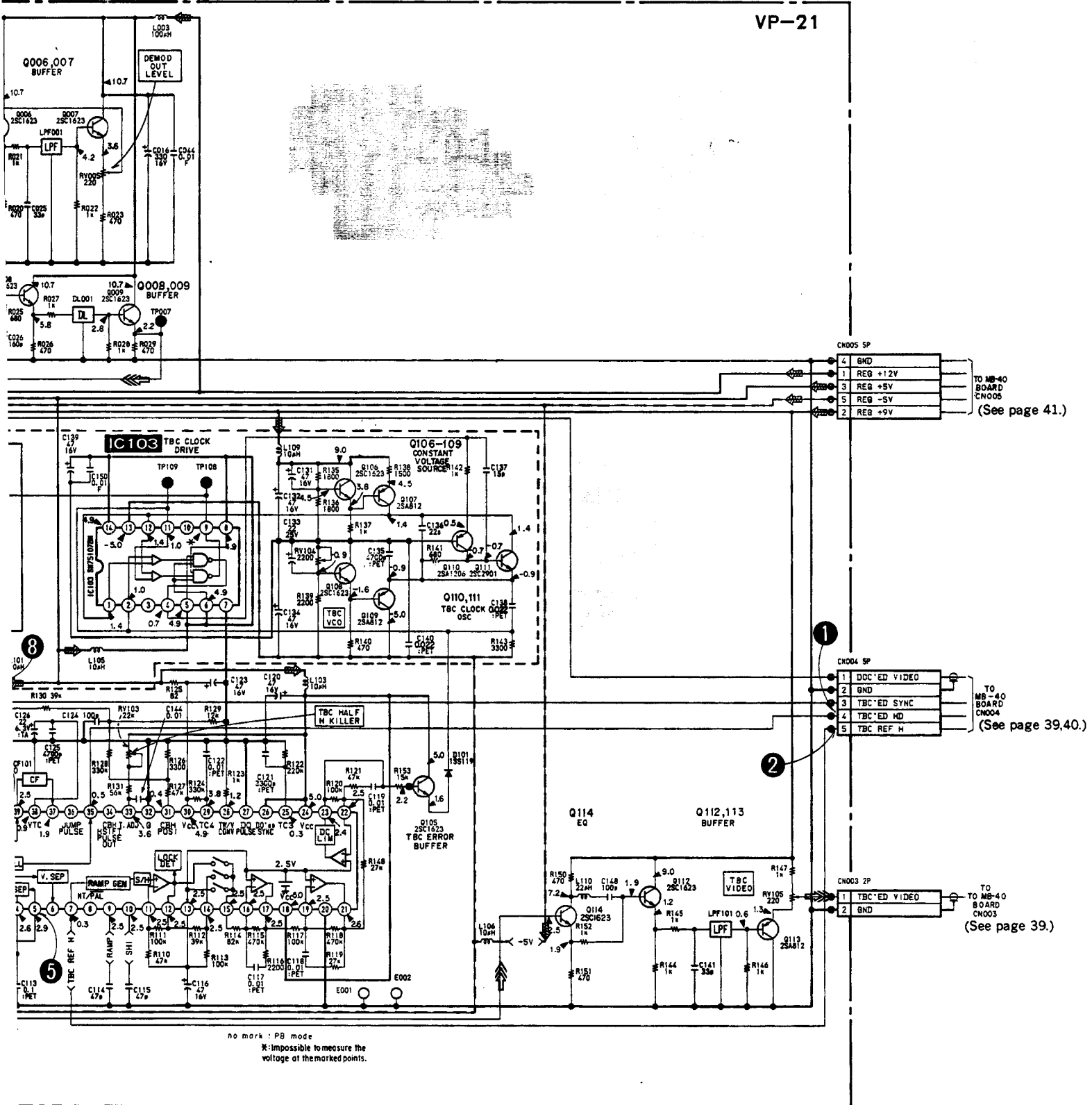




VIDEO Signal			
CHROMA	Y	Y/CHROMA	
PB			⇒⇒

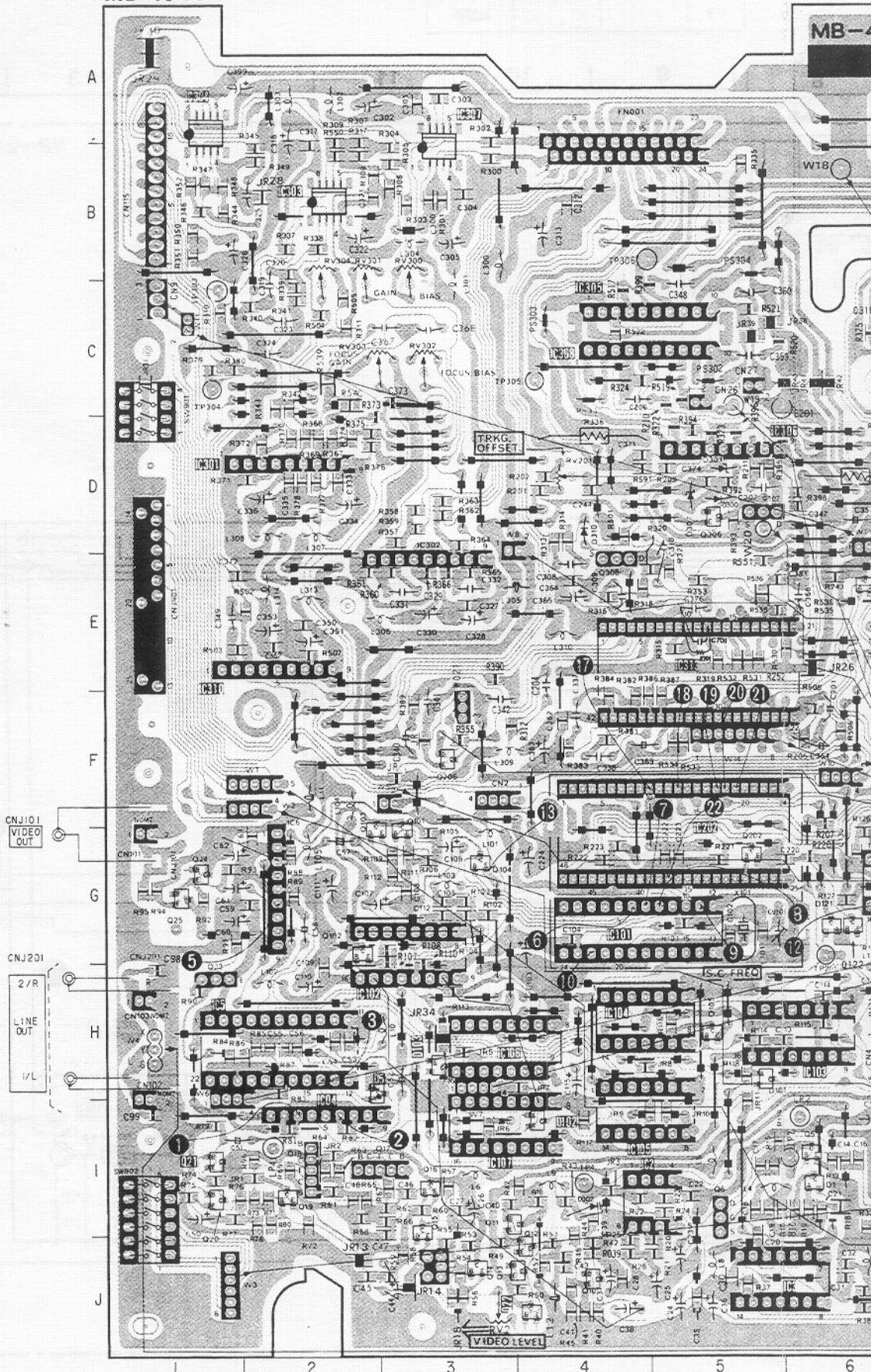
8                      9                      10                      11                      12                      13                      14                      15

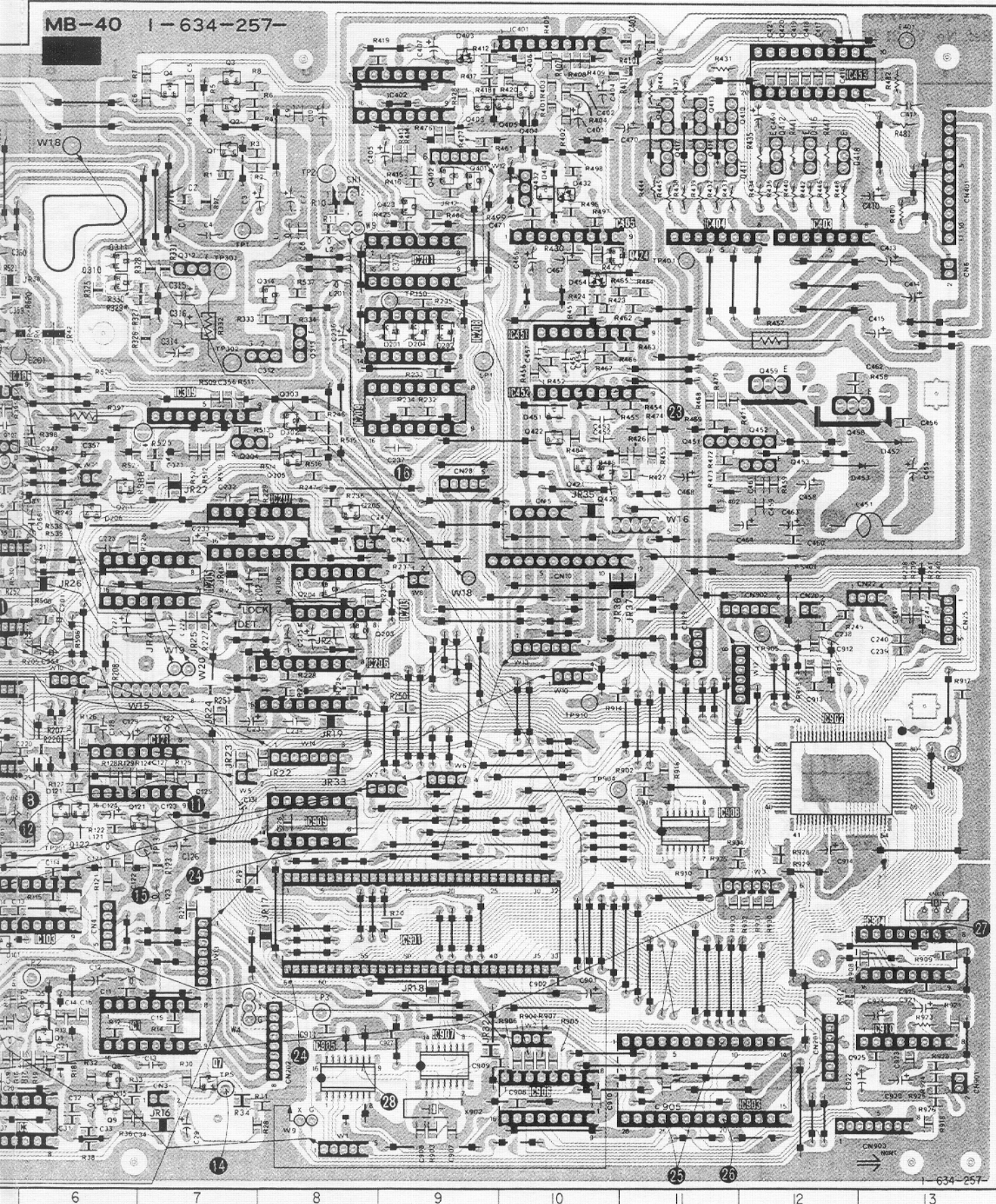
VP-21

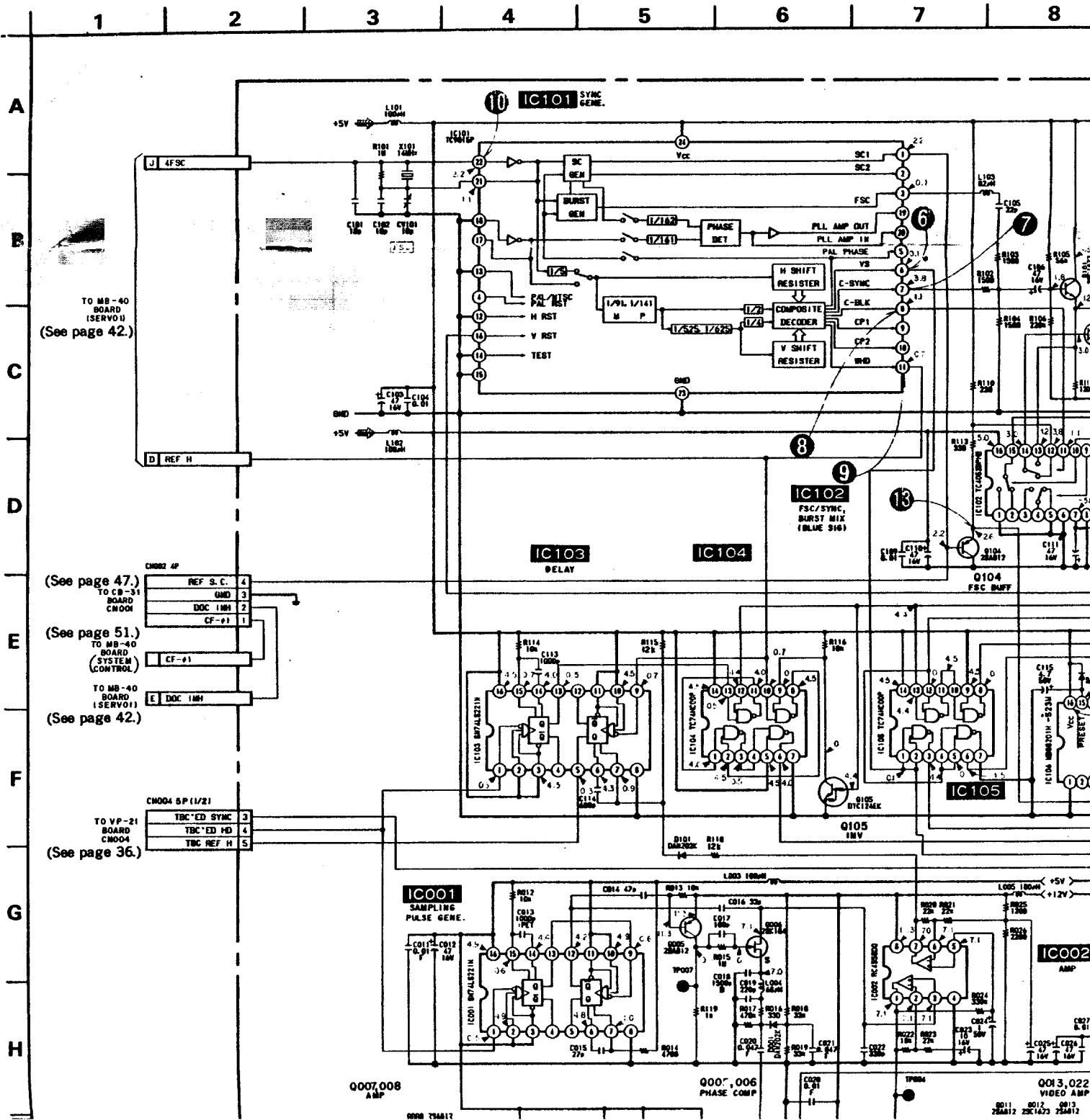


MB-40 BOARD

D001	I-6	Q016	I-3
D002	I-4	Q017	I-2
D005	H-2	Q018	I-2
D101	H-5	Q019	I-2
D102	I-4	Q020	I-1
D103	H-3	Q021	I-1
D121	G-6	Q022	J-4
D201	C-9	Q023	H-1
D202	C-9	Q024	G-1
D204	C-9	Q025	G-1
D206	E-6	Q101	G-3
D300	D-5	Q102	G-2
D301	D-5	Q103	G-2
D302	D-8	Q104	G-3
D307	D-5	Q105	H-5
D310	D-4	Q121	G-6
D403	A-9	Q122	G-6
D431	B-10	Q201	E-6
D432	B-10	Q202	G-5
D451	D-10	Q203	F-8
D452	D-13	Q204	E-8
D453	D-12	Q205	E-8
D454	C-10	Q206	F-3
IC001	I-7	Q303	D-8
IC002	I-5	Q304	D-7
IC003	J-5	Q305	D-8
IC004	I-2	Q306	D-5
IC005	H-2	Q307	D-5
IC006	G-2	Q308	E-4
IC101	G-4	Q310	C-6
IC102	G-3	Q311	C-6
IC103	H-6	Q312	C-7
IC104	H-4	Q313	C-8
IC105	I-4	Q314	C-8
IC106	H-3	Q401	B-9
IC107	I-3	Q402	B-9
IC121	G-7	Q403	A-9
IC201	C-9	Q404	A-10
IC202	G-5	Q405	A-9
IC203	E-8	Q410	A-11
IC205	E-7	Q411	B-11
IC206	F-8	Q412	B-12
IC207	E-8	Q413	A-11
IC208	C-9	Q414	B-11
IC209	D-9	Q415	B-12
IC301	D-2	Q416	A-11
IC302	E-3	Q417	B-11
IC303	B-2	Q418	B-12
IC304	A-1	Q420	D-10
IC305	C-4	Q421	D-10
IC306	D-5	Q422	D-10
IC307	A-3	Q423	B-9
IC308	C-4	Q424	C-10
IC309	D-7	Q432	B-10
IC310	E-2	Q451	D-11
IC312	C-8	Q452	D-11
IC313	E-5	Q453	D-12
IC401	A-10	Q458	D-12
IC402	A-9	Q459	D-12
IC403	B-12		
IC404	B-11		
IC405	B-10		
IC451	C-10		
IC452	D-10		
IC453	A-12		
IC901	H-9		
IC902	G-12		
IC903	J-11		
IC904	H-13		
IC905	I-8		
IC906	J-10		
IC907	I-9		
IC908	G-11		
IC909	G-8		
IC910	I-13		
Q001	B-7		
Q002	A-7		
Q003	A-7		
Q004	A-7		
Q005	I-6		
Q006	I-5		
Q007	I-7		
Q008	I-6		
Q009	J-6		
Q010	J-4		
Q011	I-3		
Q012	J-4		
Q013	J-4		
Q014	J-3		
Q015	I-3		







TO MB-40 BOARD (SERVO I)  
(See page 42.)

(See page 47.)  
TO CB-31 BOARD CMO04  
REF S. C. 4  
GND 3  
DOC 1MH 2  
CF-#1 1

(See page 51.)  
TO MB-40 BOARD (SYSTEM CONTROL)  
CF-#1

TO MB-40 BOARD (SERVO I)  
E DOC 1MH  
(See page 42.)

TO VP-21 BOARD CMO04  
TBC'ED SYNC 3  
TBC'ED HD 4  
TBC REF H 5  
(See page 36.)

0007,008 AMP

0007,006 PHASE COMP

0013,022 VIDEO AMP  
0011 0012 0013  
25A812 25C1473 25A812

B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L

TO MB-40 BOARD (SERVO 1)  
(See page 42.)

(See page 47.)

(See page 51.)

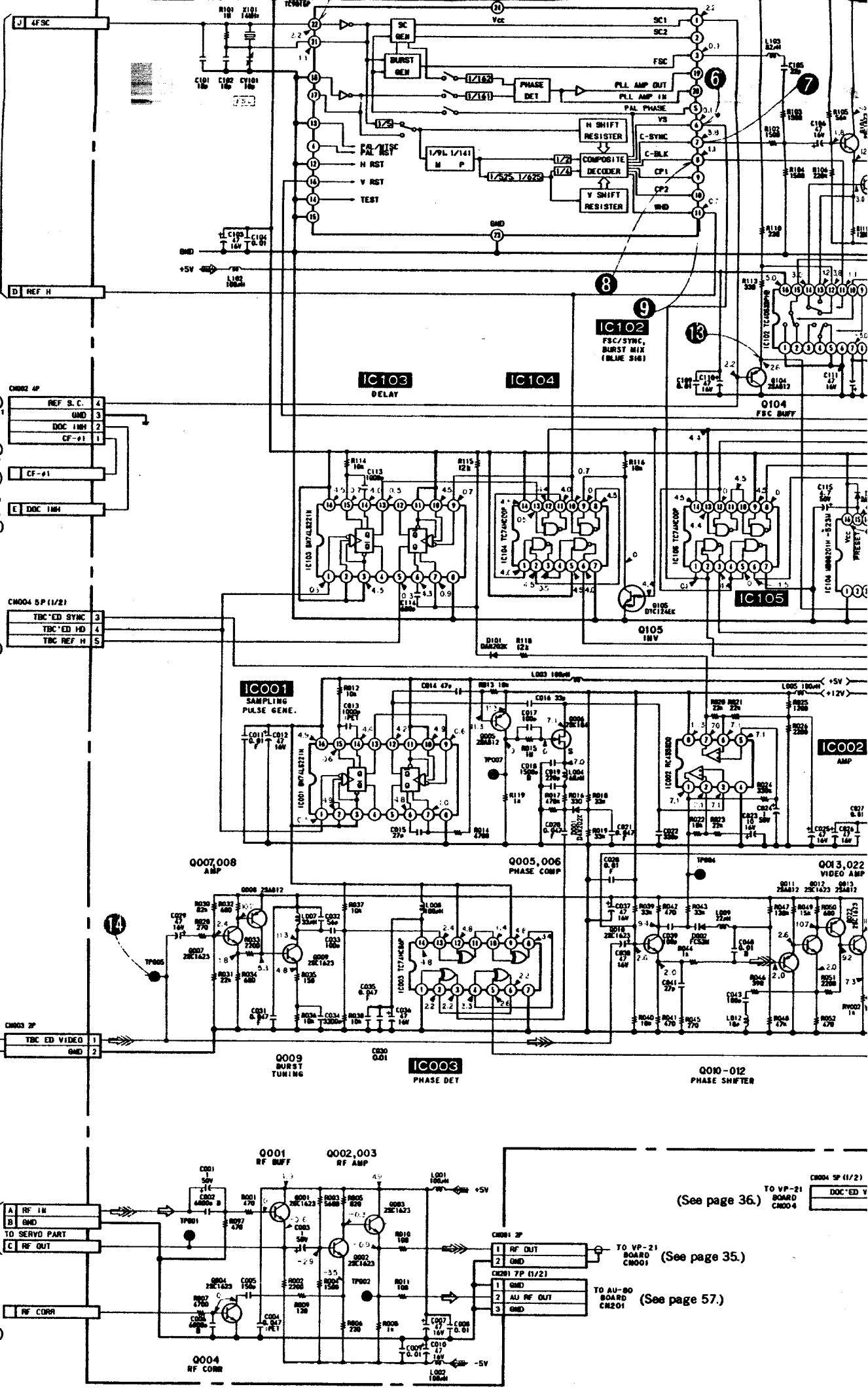
(See page 42.)

(See page 36.)

(See page 36.)

(See page 42.)

(See page 51.)



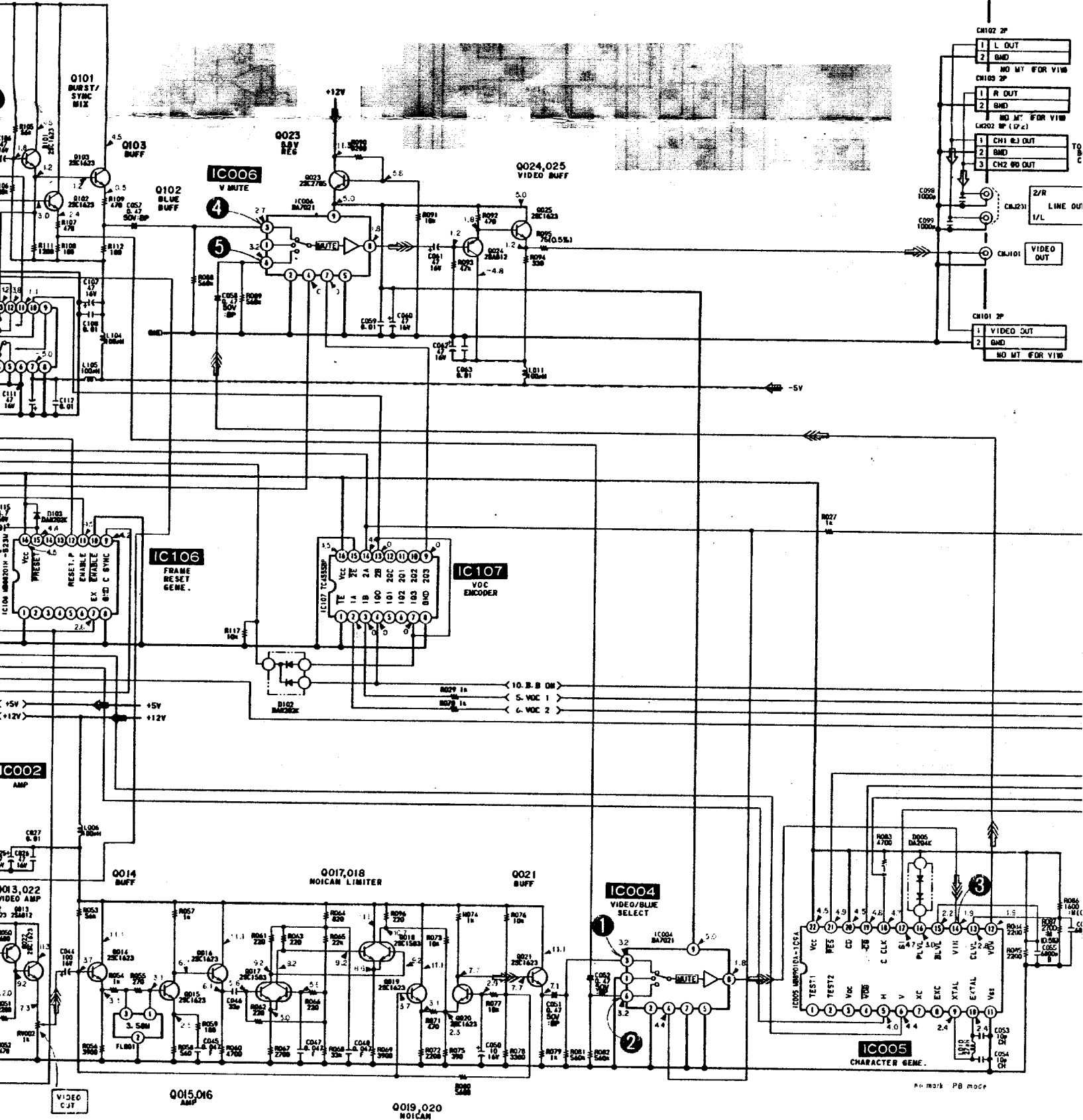
(See page 36.)

(See page 35.)

(See page 57.)

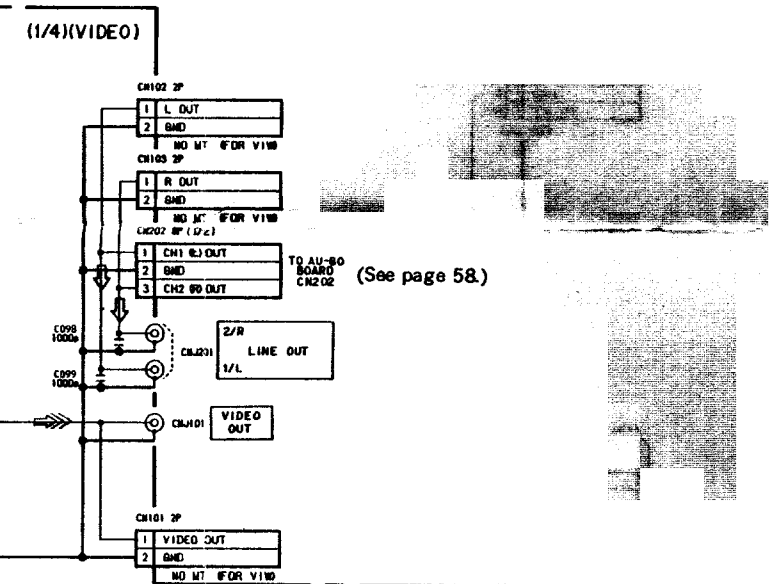


MB-40 (1/4)(VIDEO)

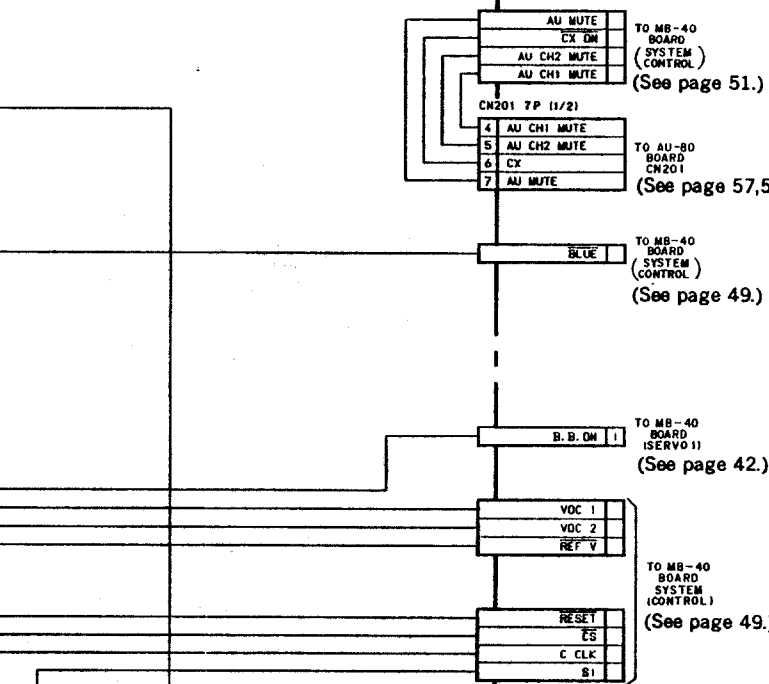


Re mark PB mode





(See page 58.)



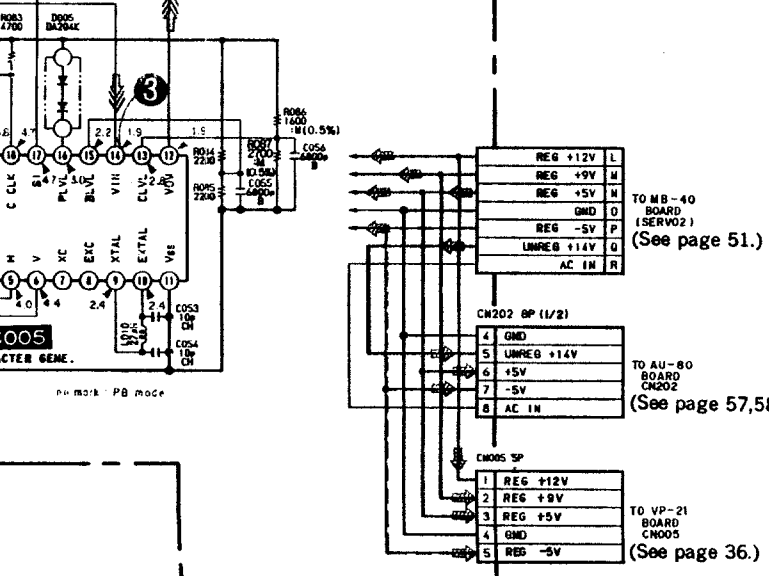
(See page 51.)

(See page 57,58.)

(See page 49.)

(See page 42.)

(See page 49.)

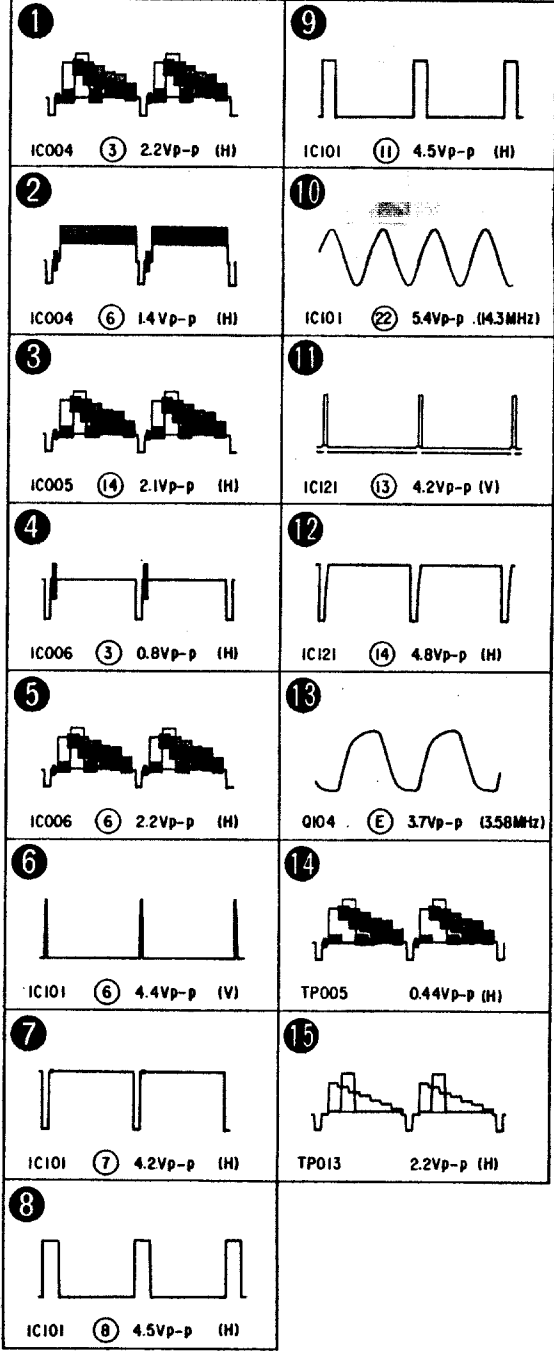


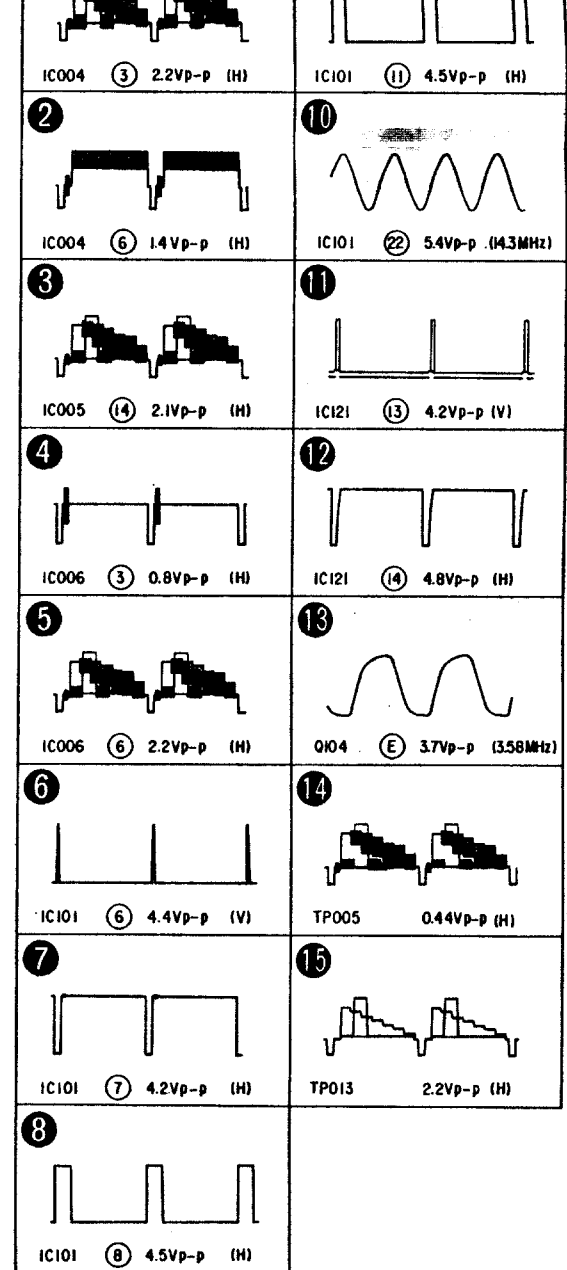
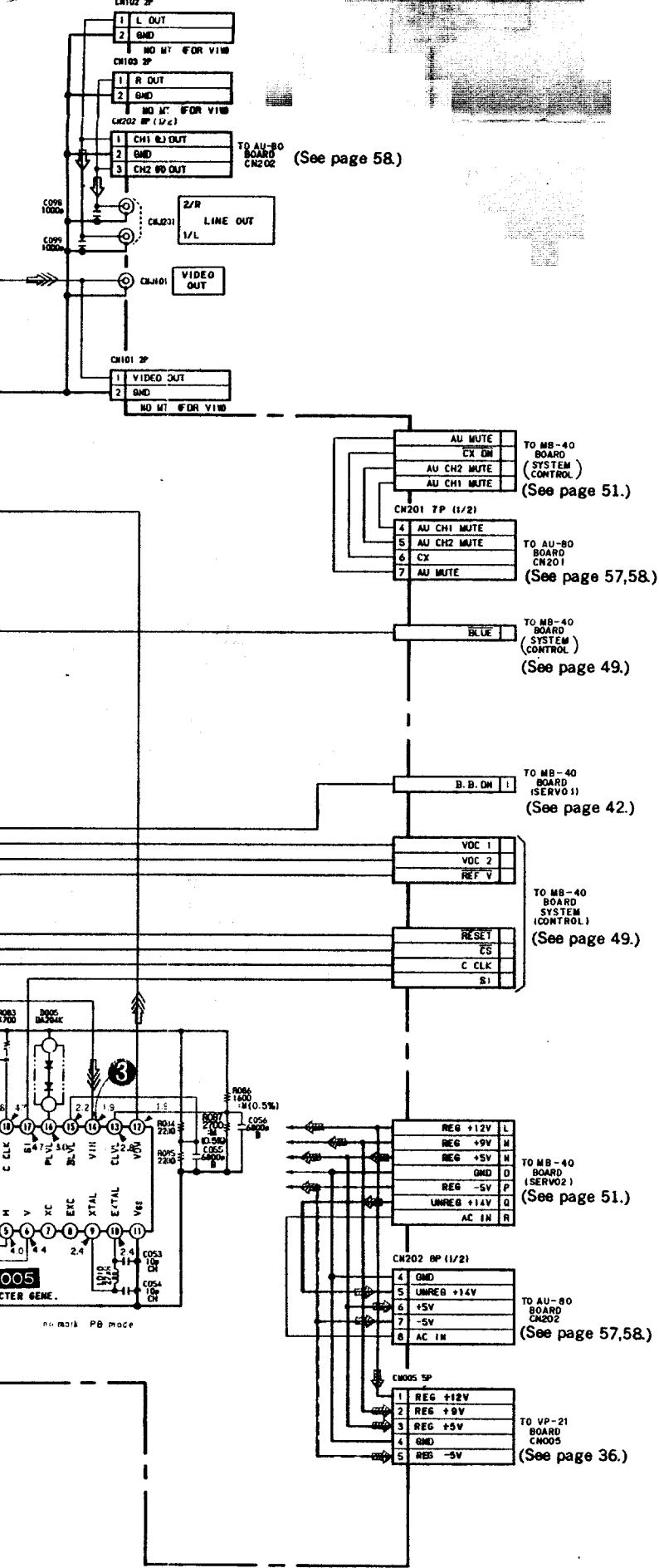
(See page 51.)

(See page 57,58.)

(See page 36.)

**MB-40 BOARD (VIDEO)**

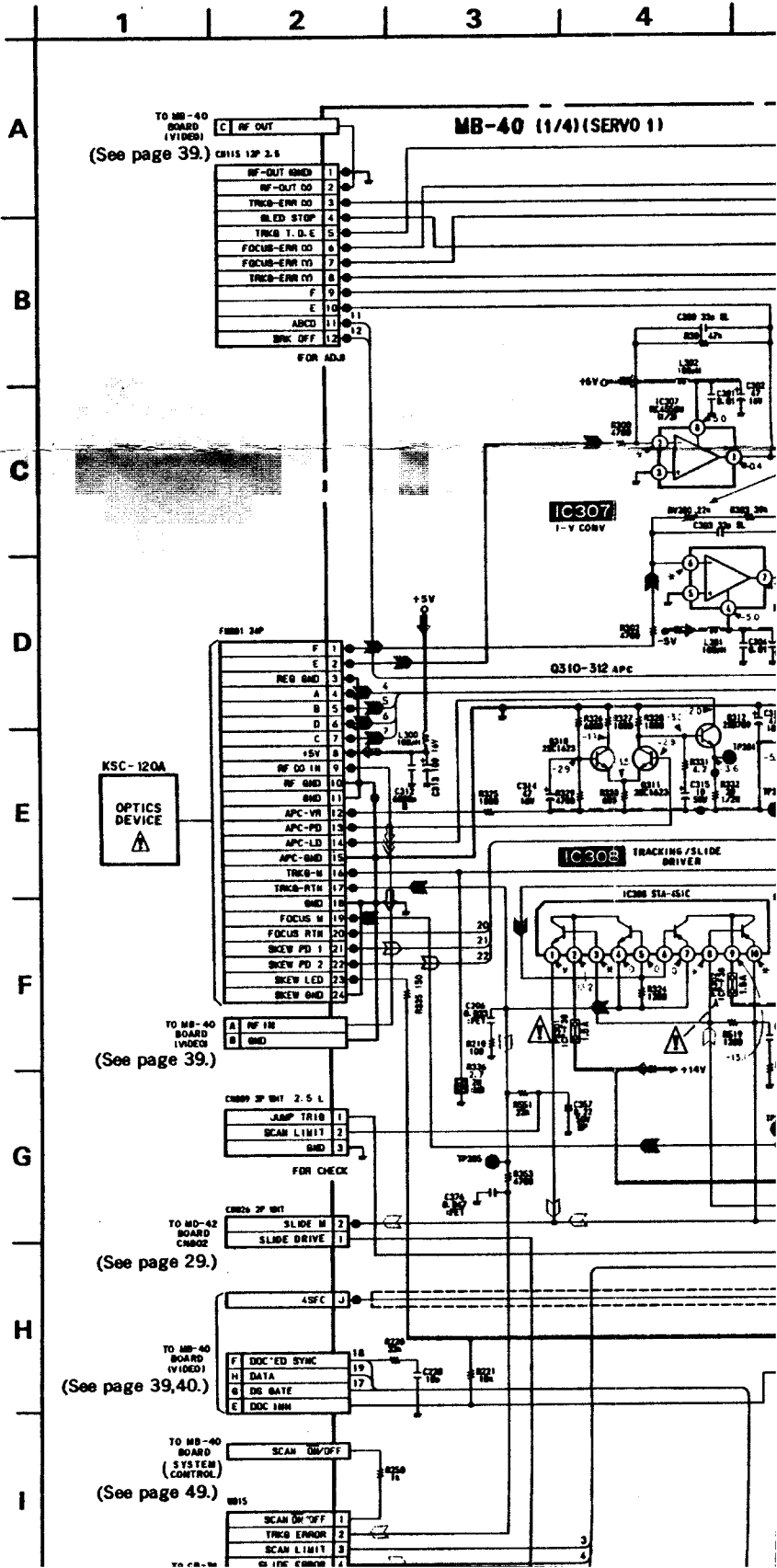
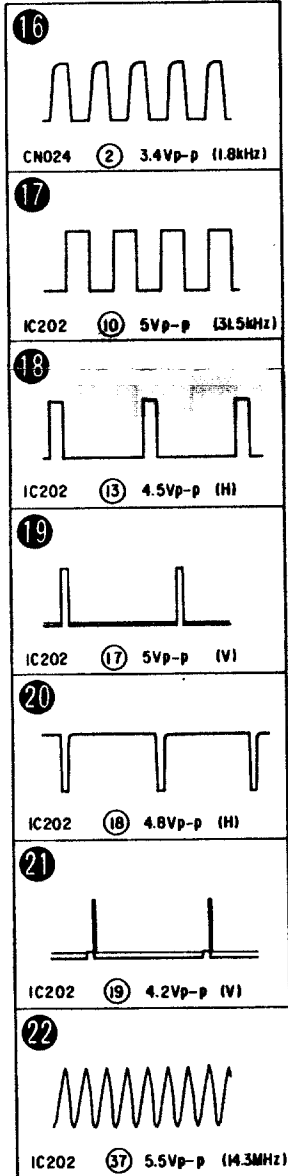


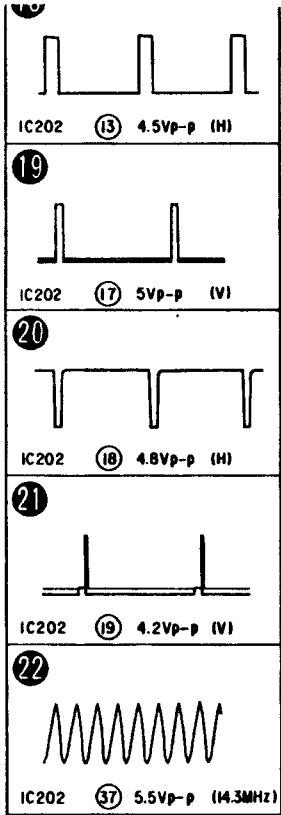


• Signal path

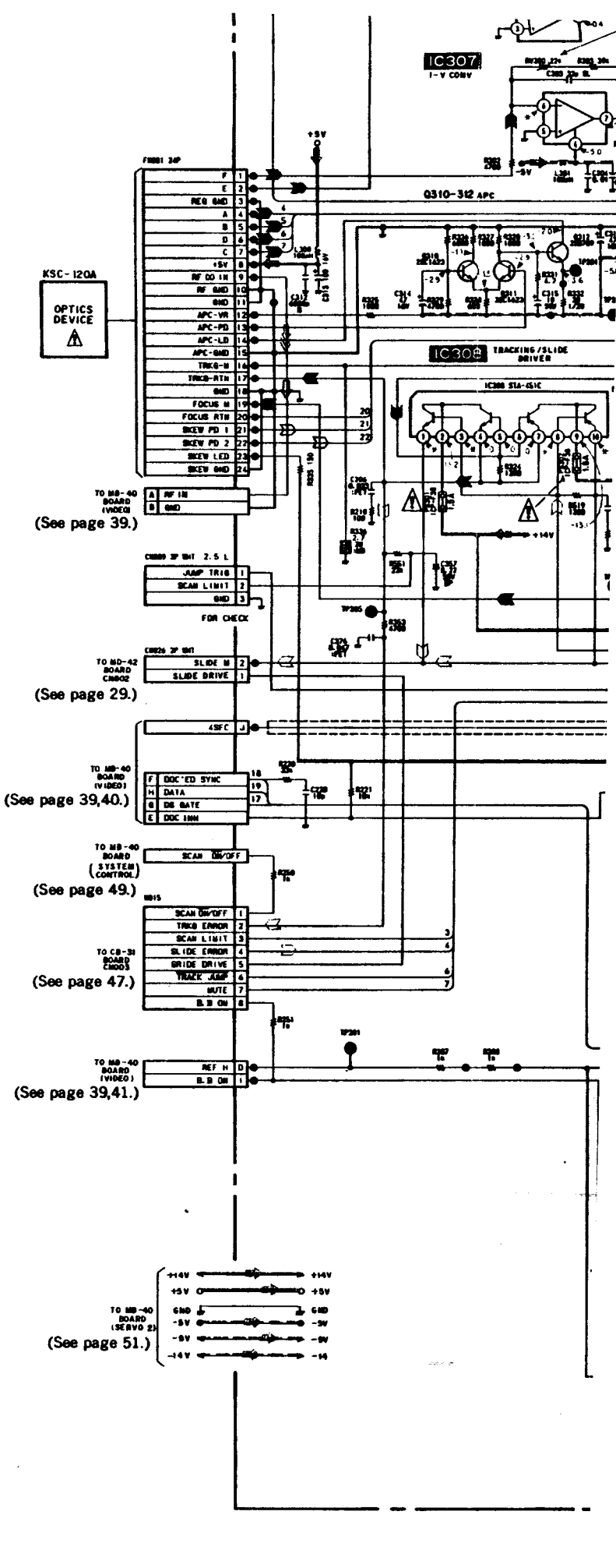
	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
PB			⇒⇒⇒	⇒

MB-40 BOARD (SERVO 1)





C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M



• Signal path

Spindle servo(speed and phase)	➤➤➤
Tracking servo	➤
Slide servo	➤
Focus servo	➤
Skew servo	➤

• Signal path

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
PB			➤➤➤	➤

4

5

6

7

8

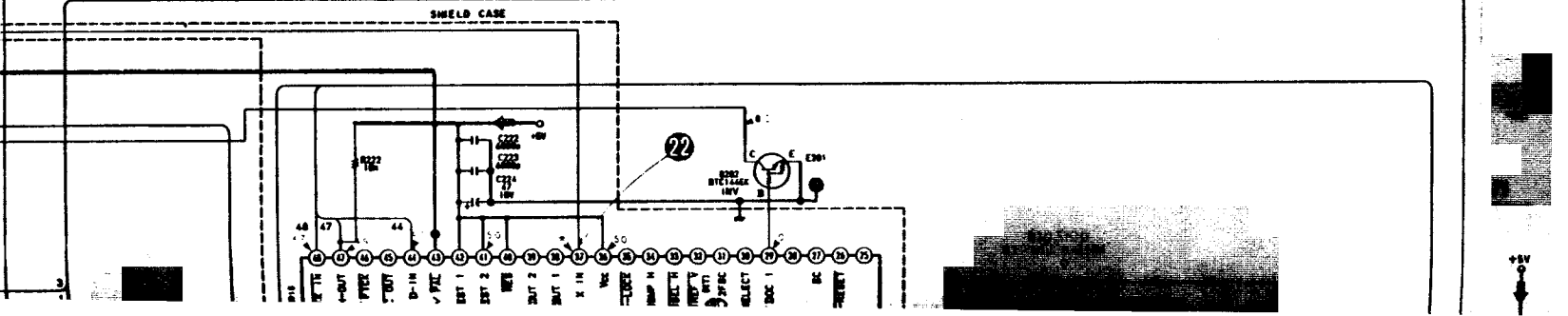
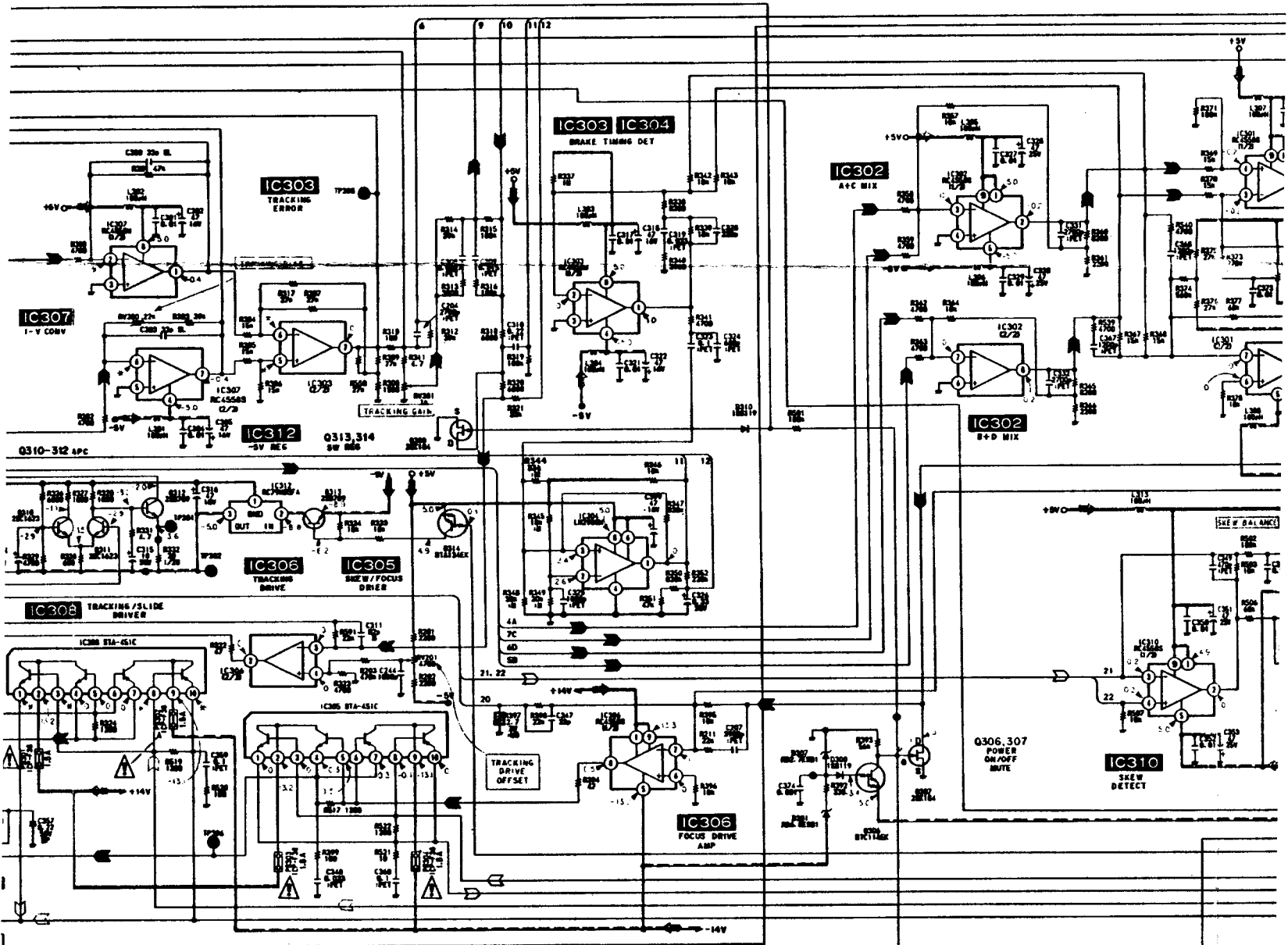
9

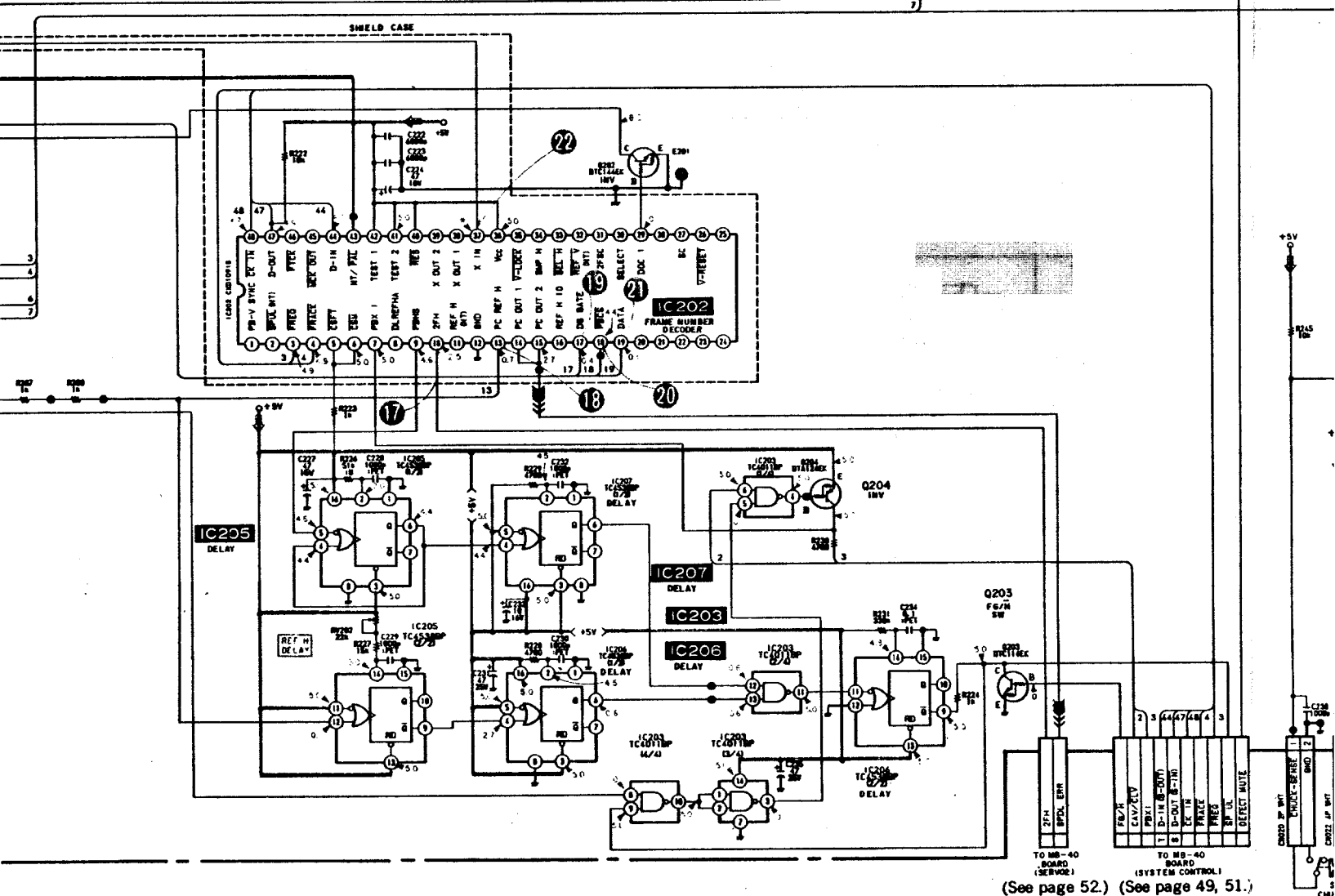
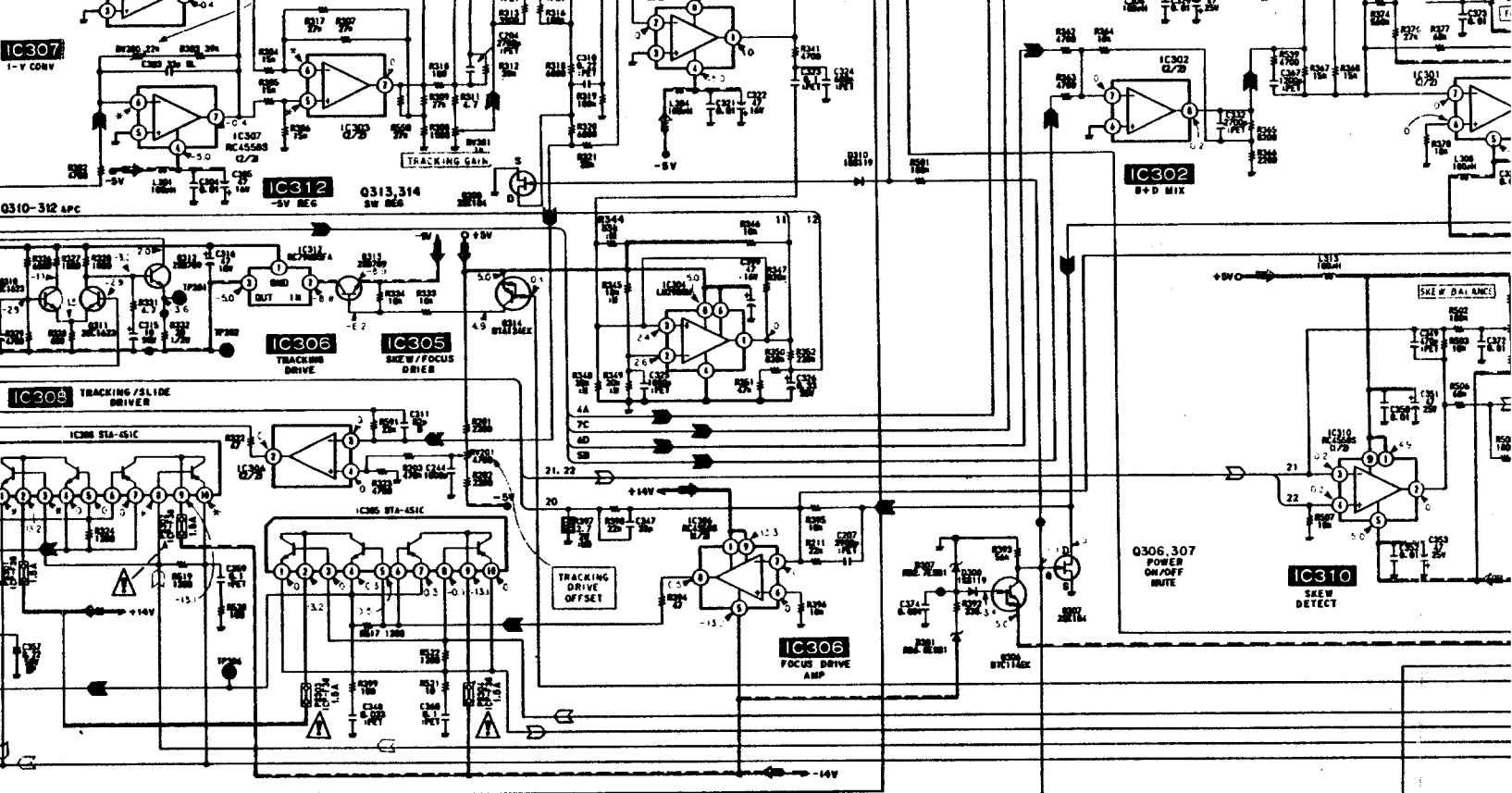
10

11

1

(1/4) (SERVO 1)



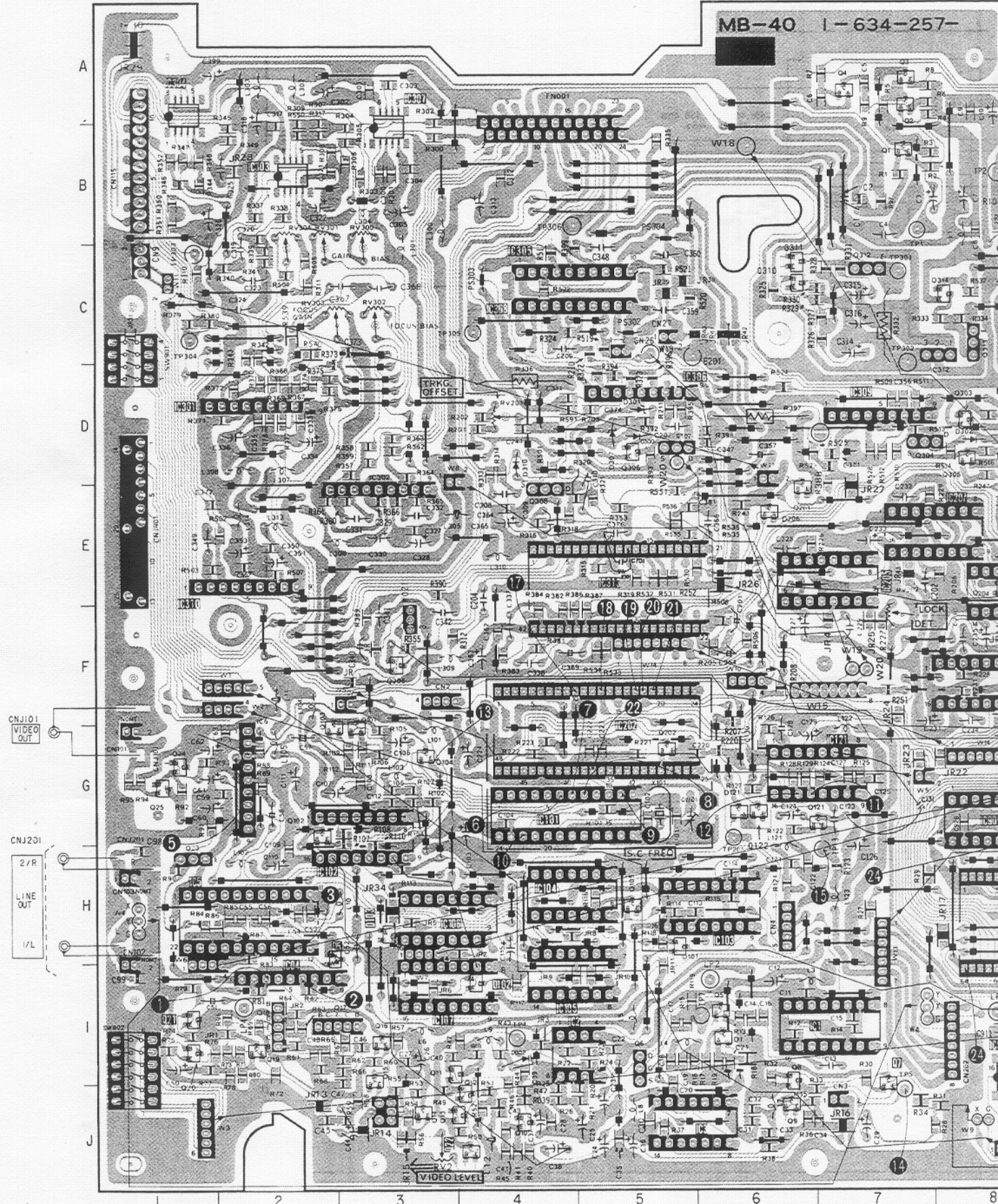


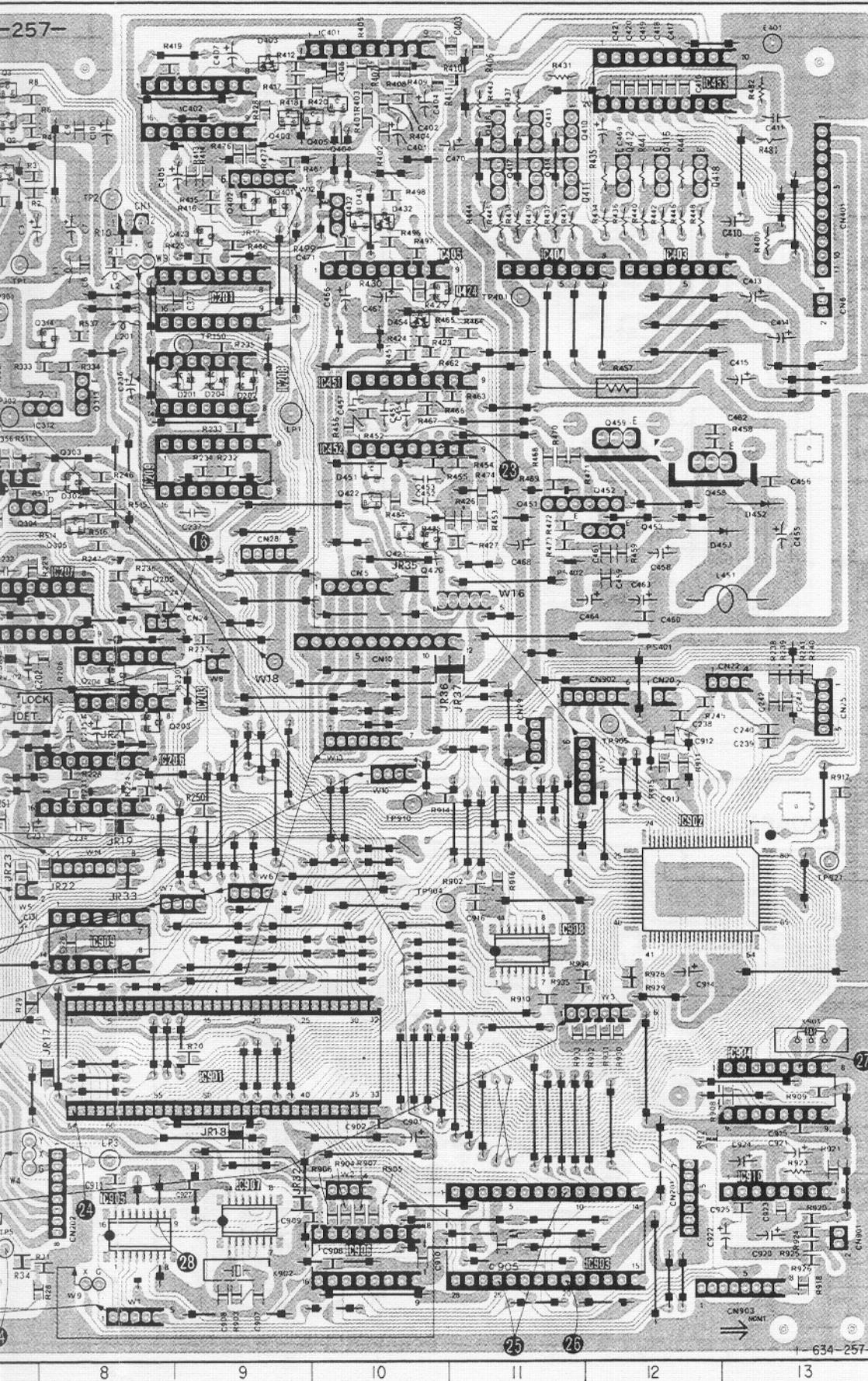
(See page 52.) (See page 49, 51.)



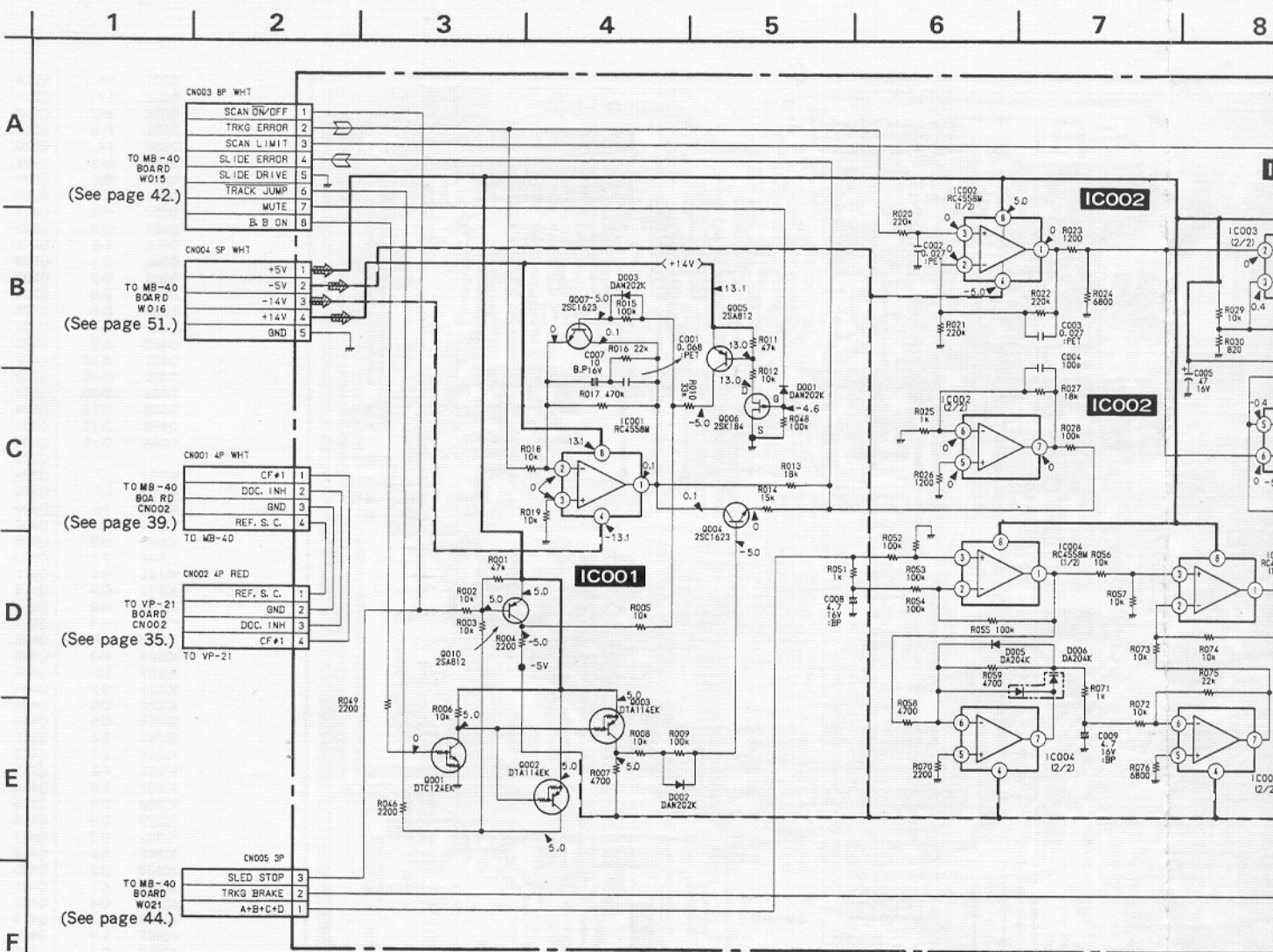




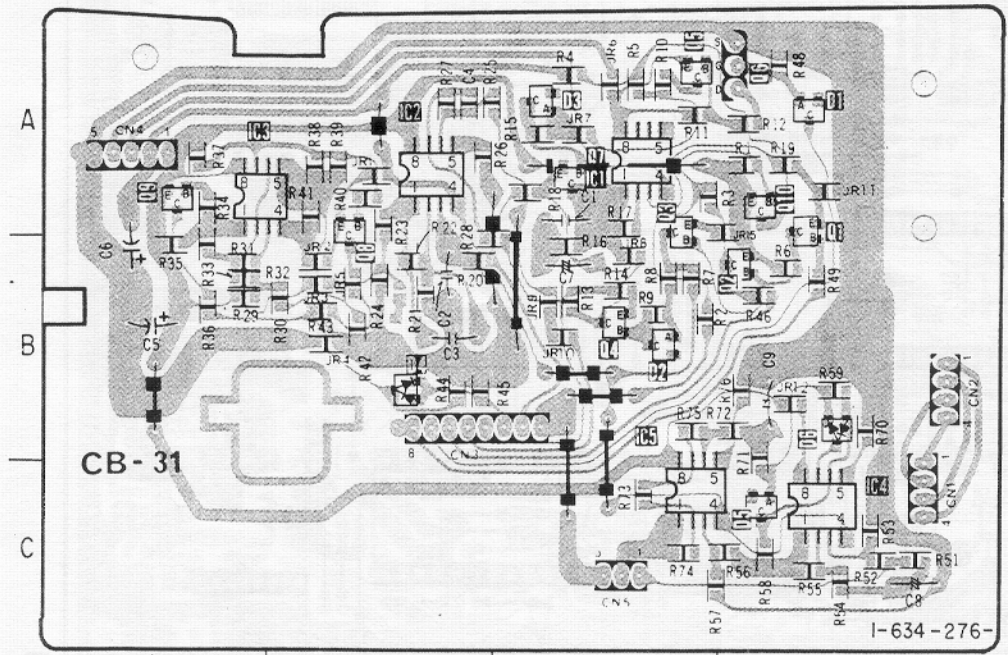




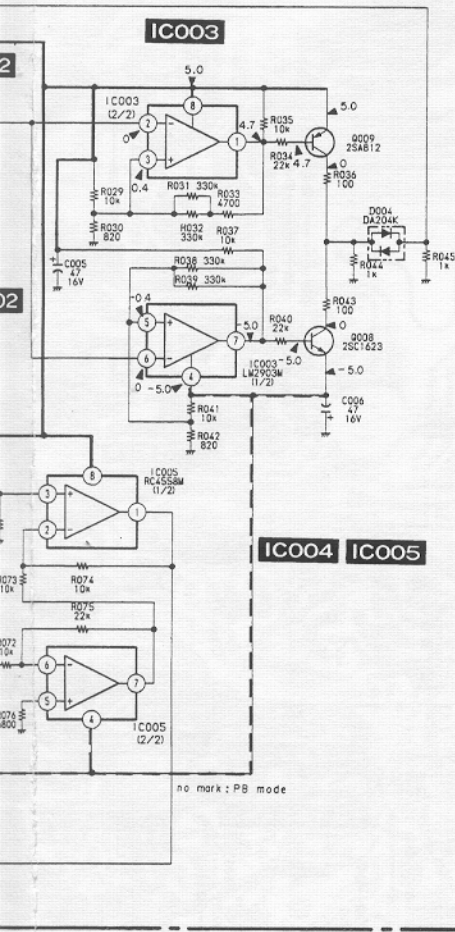
D001	I-6	Q016
D002	I-4	Q017
D005	H-2	Q018
D101	H-5	Q019
D102	I-4	Q020
D103	H-3	Q021
D121	G-6	Q022
D201	C-9	Q023
D202	C-9	Q024
D204	C-9	Q025
D206	E-6	Q101
D300	D-5	Q102
D301	D-5	Q103
D302	D-8	Q104
D307	D-5	Q105
D310	D-4	Q121
D403	A-9	Q122
D431	B-10	Q201
D432	B-10	Q202
D451	D-10	Q203
D452	D-13	Q204
D453	D-12	Q205
D454	C-10	Q206
IC001	I-7	Q303
IC002	I-5	Q304
IC003	J-5	Q305
IC004	I-2	Q306
IC005	H-2	Q307
IC006	G-2	Q308
IC101	G-4	Q310
IC102	G-3	Q311
IC103	H-6	Q312
IC104	H-4	Q313
IC105	I-4	Q314
IC106	H-3	Q401
IC107	I-3	Q402
IC121	G-7	Q403
IC201	C-9	Q404
IC202	G-5	Q405
IC203	E-8	Q410
IC205	E-7	Q411
IC206	F-8	Q412
IC207	E-8	Q413
IC208	C-9	Q414
IC209	D-9	Q415
IC301	D-2	Q416
IC302	E-3	Q417
IC303	B-2	Q418
IC304	A-1	Q420
IC305	C-4	Q421
IC306	D-5	Q422
IC307	A-3	Q423
IC308	C-4	Q424
IC309	D-7	Q432
IC310	E-2	Q433
IC312	C-8	Q451
IC313	E-5	Q452
IC401	A-10	Q453
IC402	A-9	Q458
IC403	B-12	Q459
IC404	B-11	
IC405	B-10	
IC451	C-10	
IC452	D-10	
IC453	A-12	
IC901	H-9	
IC902	G-12	
IC903	J-11	
IC904	H-13	
IC905	I-8	
IC906	J-10	
IC907	I-9	
IC908	G-11	
IC909	G-8	
IC910	I-13	
Q001	B-7	
Q002	A-7	
Q003	A-7	
Q004	A-7	
Q005	I-6	
Q006	I-5	
Q007	I-7	
Q008	I-6	
Q009	J-6	
Q010	J-4	
Q011	I-3	
Q012	J-4	
Q013	J-4	
Q014	J-3	
Q015	I-3	



CB-31 BOARD

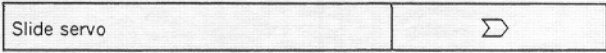


CB-31 (SL SERVO)



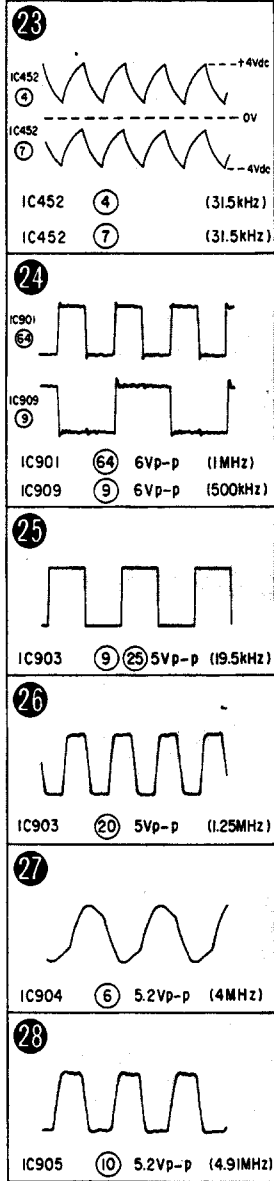
no mark: PB mode

• Signal path

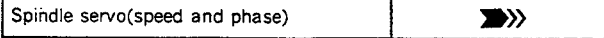


- D001 A-4
- D002 B-3
- D003 A-3
- D004 B-2
- D005 C-4
- D006 B-4
  
- IC001 A-3
- IC002 A-2
- IC003 A-1
- IC004 C-4
- IC005 C-3
  
- Q001 A-4
- Q002 B-4
- Q003 A-3
- Q004 B-3
- Q005 A-3
- Q006 A-4
- Q007 A-3
- Q008 A-2
- Q009 A-1
- Q010 A-4

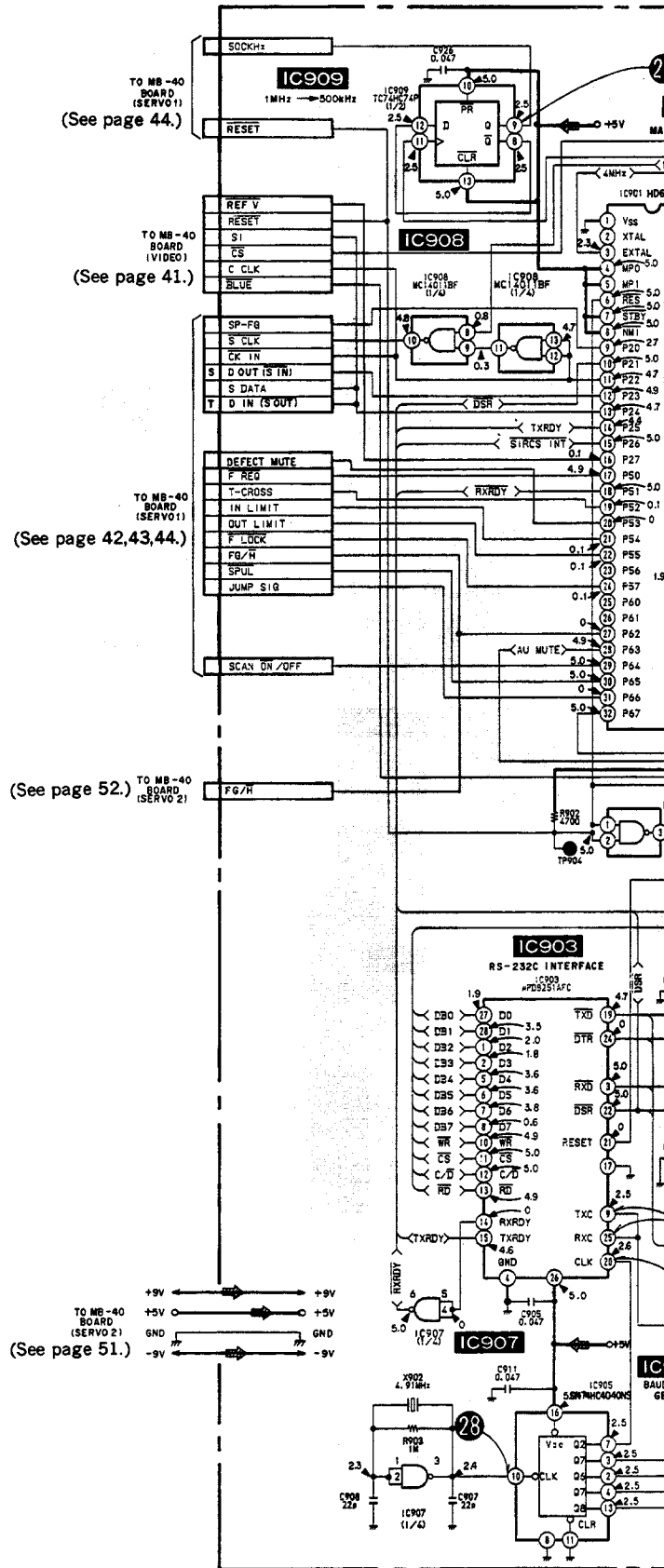
**MB-40 BOARD (S/S)**

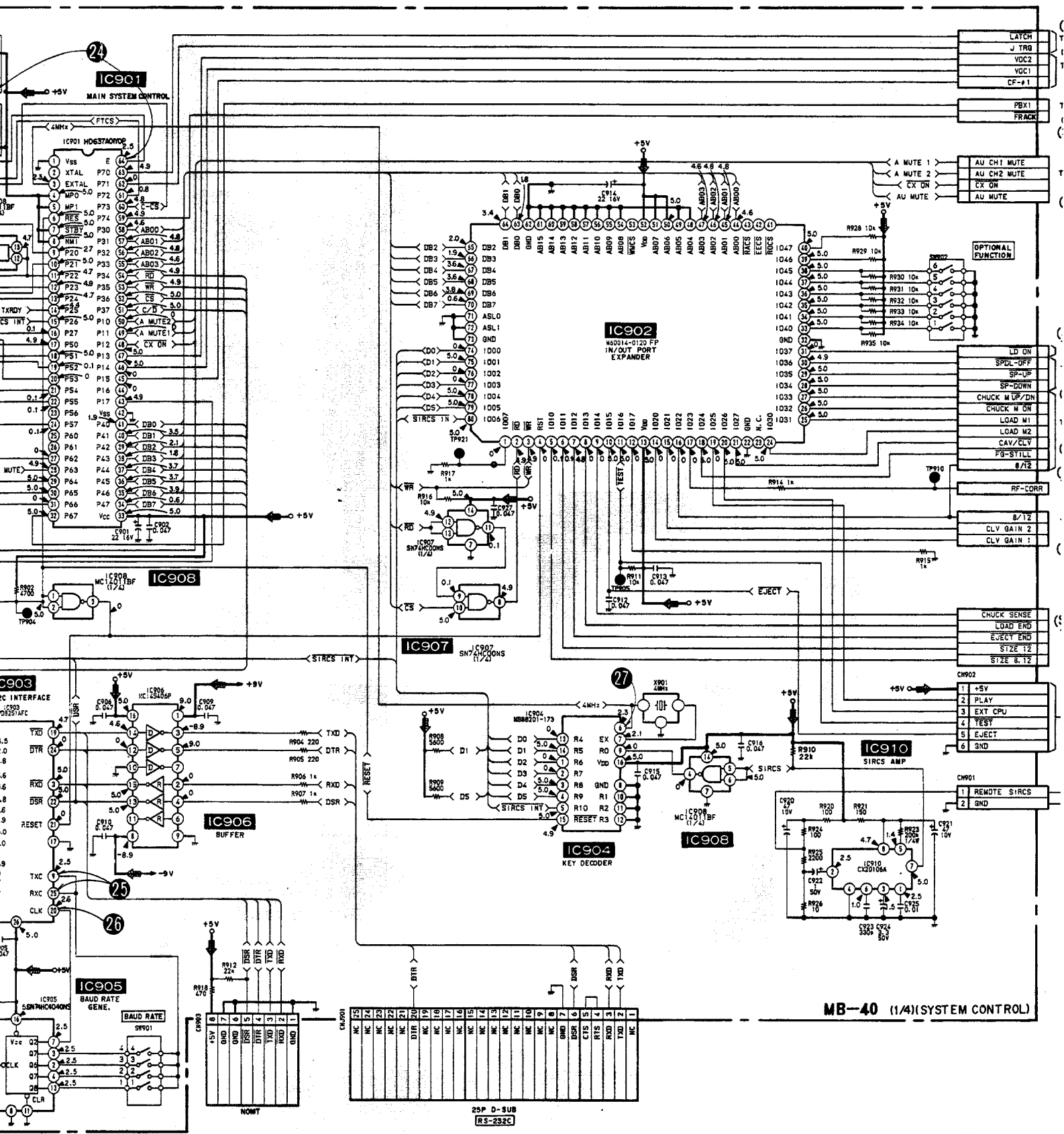


• Signal path



A  
B  
C  
D  
E  
F  
G  
H  
I  
J



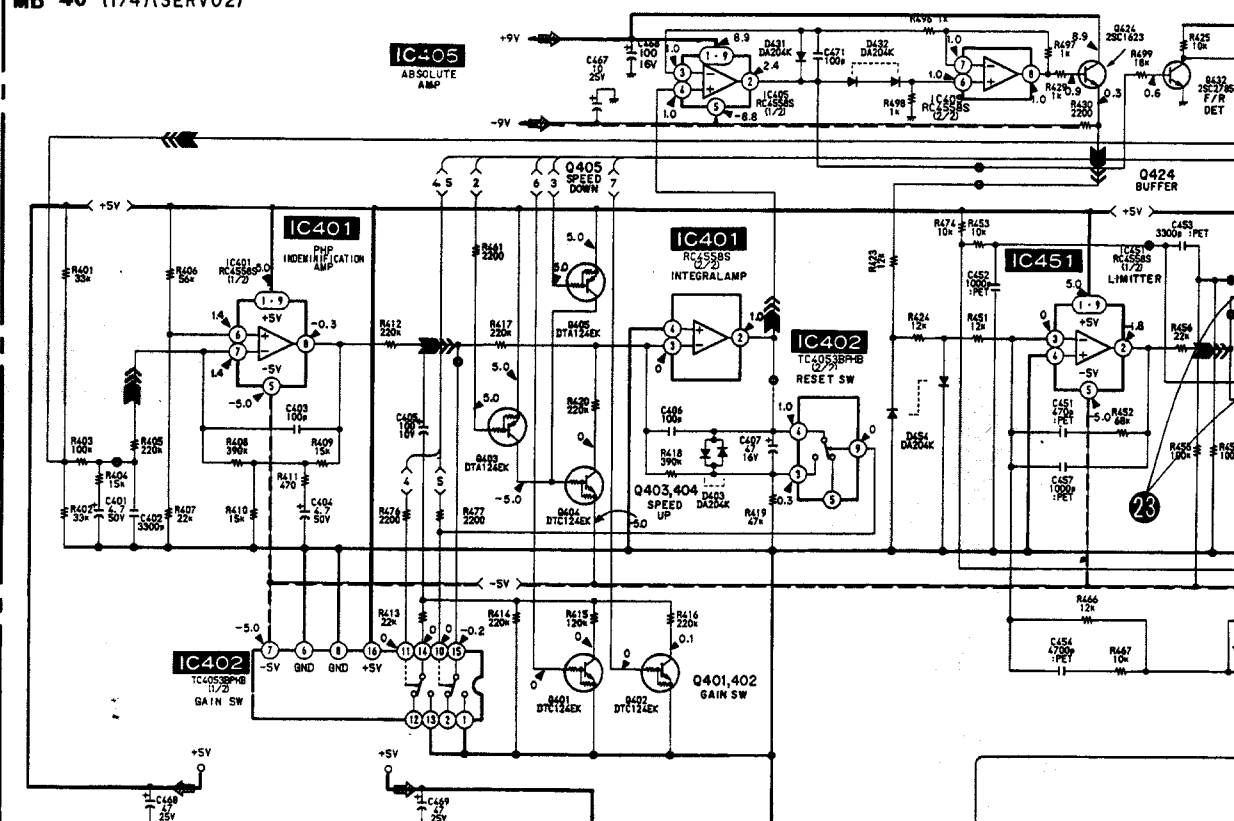


MB-40 (1/4) SYSTEM CONTROL

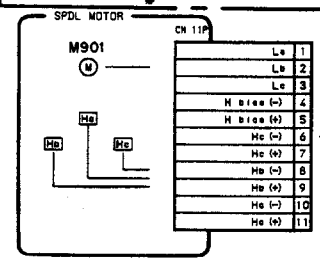


**MB-40 (1/4) (SERVO2)**

(See page 44.)  
 TO MB-40 BOARD (SERVO1)  
 TO MB-40 BOARD (VIDEO) 39,41.)  
 TO MB-40 BOARD (SERVO1) (See page 43.)  
 TO MB-40 BOARD (VIDEO) (See page 41.)  
 TO MB-40 BOARD (SERVO1) (See page 44.)  
 TO MB-40 BOARD (SERVO2) (See page 52.)  
 TO MB-40 BOARD (SERVO1) (See page 44.)  
 TO MB-40 BOARD (SERVO2) (See page 39.)  
 TO MB-40 BOARD (SERVO2) (See page 52.)

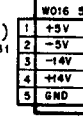


(See page 44.)  
 TO MB-40 BOARD (SERVO1)

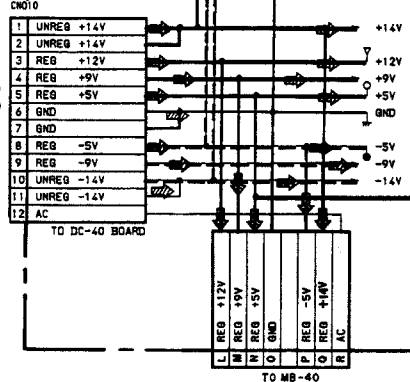


J901 REMOTE

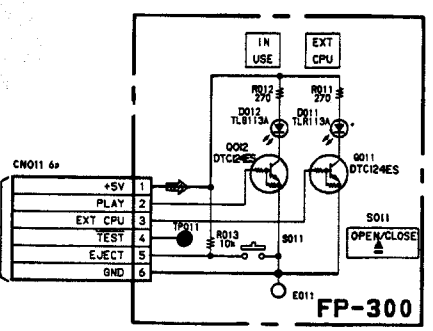
(See page 47.)  
 TO CB-31 BOARD CNO04



(See page 60.)  
 TO DC-40 BOARD CNO05

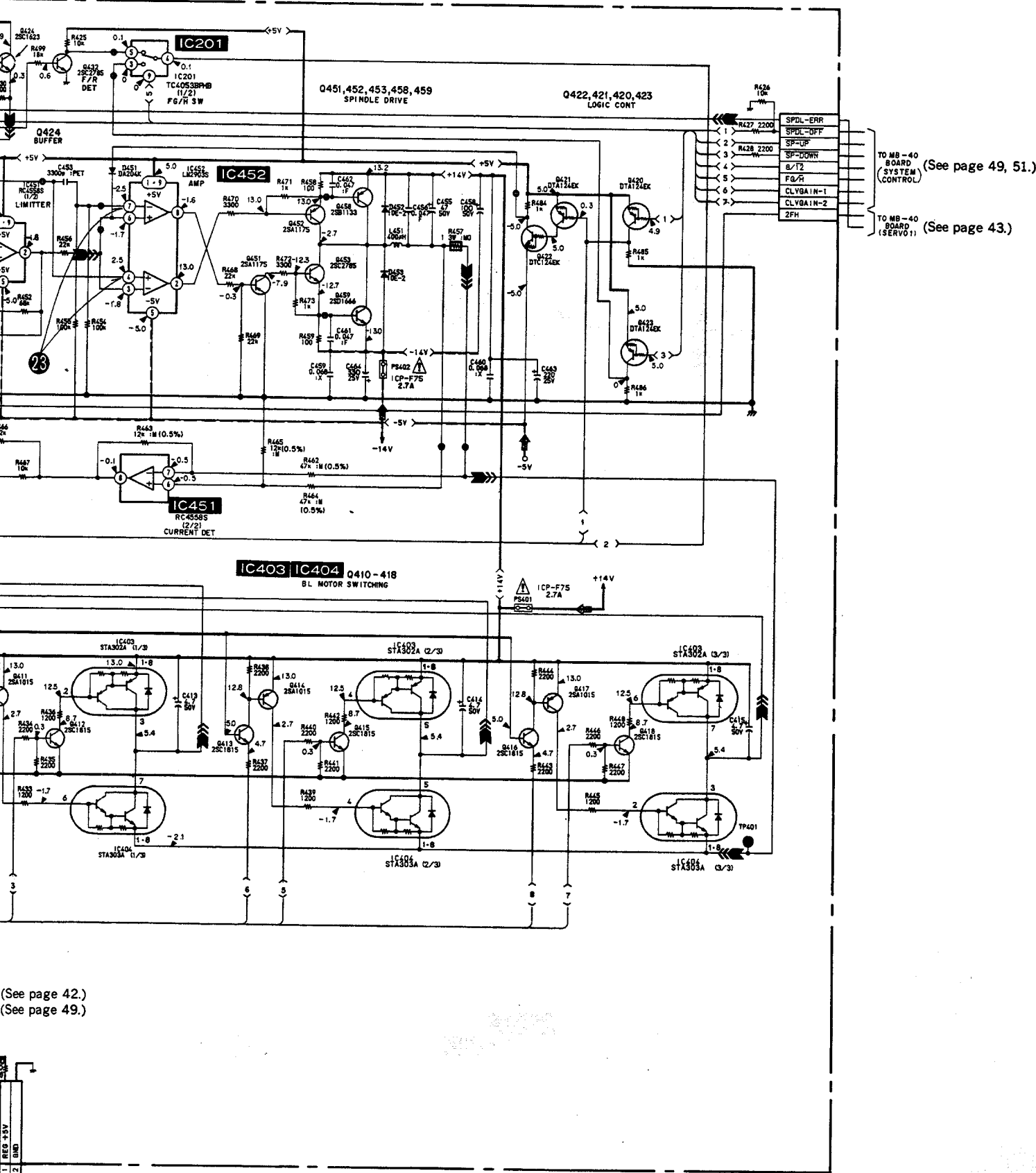


TO MB-40 BOARD (SERVO1) (See page 42.)  
 TO MB-40 BOARD (SYSTEM CONTROL) (See page 49.)



(See page 41.)

(See page 59.)



TO MB-40 BOARD (SYSTEM CONTROL) (See page 49, 51.)

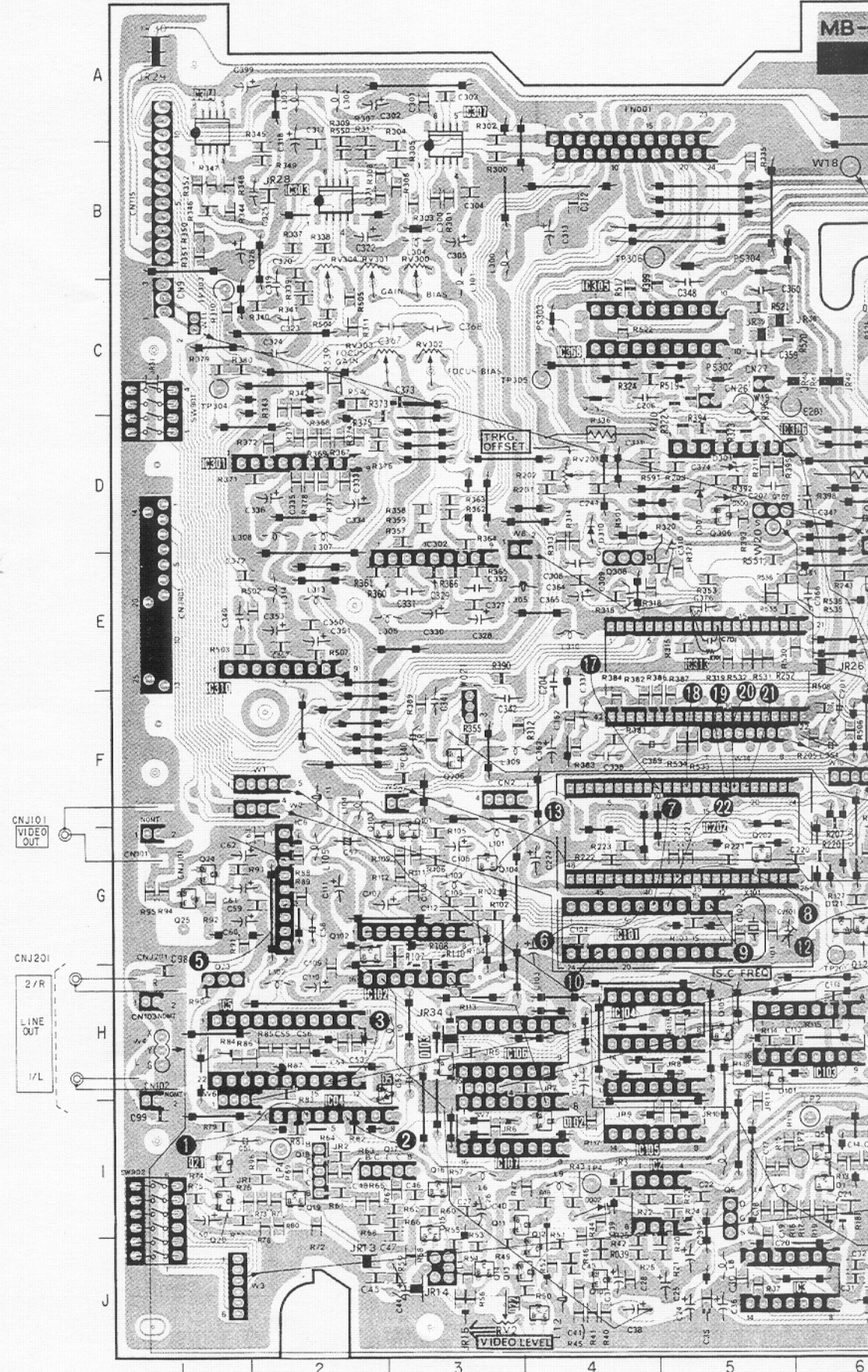
TO MB-40 BOARD (SERVO1) (See page 43.)

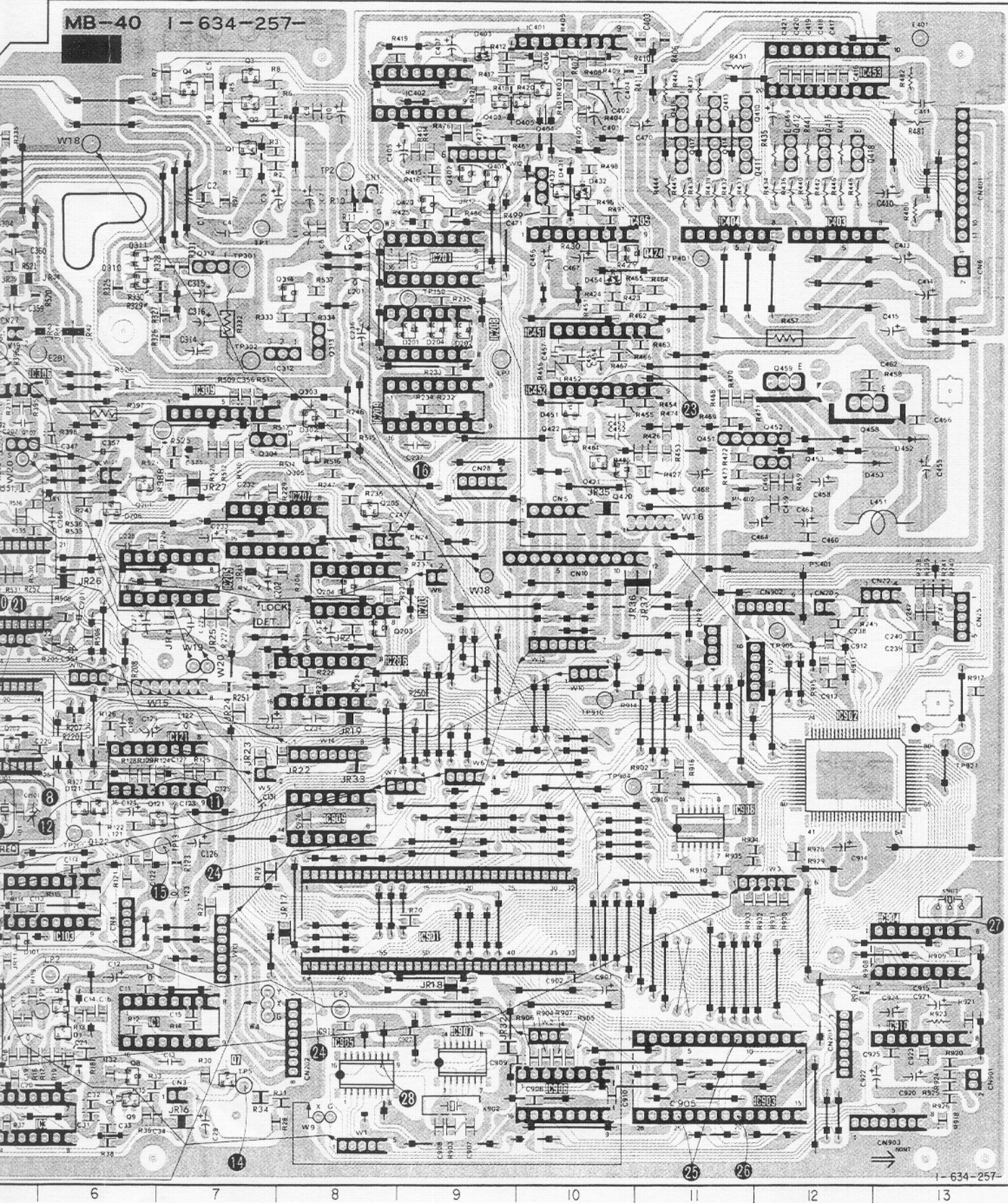
(See page 42.)  
(See page 49.)

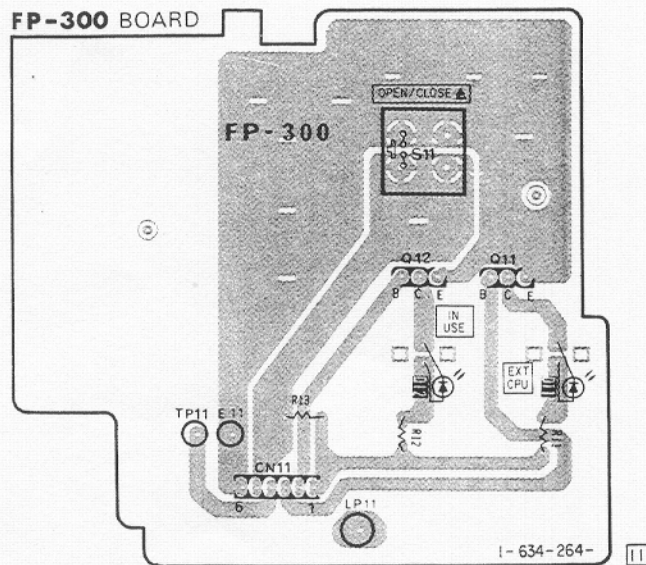


D001	I-6	Q016	I-3
D002	I-4	Q017	I-2
D005	H-2	Q018	I-2
D101	H-5	Q019	I-2
D102	I-4	Q020	I-1
D103	H-3	Q021	I-1
D121	G-6	Q022	J-4
D201	C-9	Q023	H-1
D202	C-9	Q024	G-1
D204	C-9	Q025	G-1
D206	E-6	Q101	G-3
D300	D-5	Q102	G-2
D301	D-5	Q103	G-2
D302	D-8	Q104	G-3
D307	D-5	Q105	H-5
D310	D-4	Q121	G-6
D403	A-9	Q122	G-6
D431	B-10	Q201	E-6
D432	B-10	Q202	G-5
D451	D-10	Q203	F-8
D452	D-13	Q204	E-8
D453	D-12	Q205	E-8
D454	C-10	Q206	F-3
		Q303	D-8
		Q304	D-7
		Q305	D-8
IC001	I-7	Q306	D-5
IC002	I-5	Q307	D-5
IC003	J-5	Q308	E-4
IC004	I-2	Q310	C-6
IC005	H-2	Q311	C-6
IC006	G-2	Q312	C-7
IC101	G-4	Q313	C-8
IC102	G-3	Q314	C-8
IC103	H-6	Q401	B-9
IC104	H-4	Q402	B-9
IC105	I-4	Q403	A-9
IC106	H-3	Q404	A-10
IC107	I-3	Q405	A-9
IC121	G-7	Q410	A-11
IC201	C-9	Q411	B-11
IC202	G-5	Q412	B-12
IC203	E-8	Q413	A-11
IC205	E-7	Q414	B-11
IC206	F-8	Q415	B-12
IC207	E-8	Q416	A-11
IC208	C-9	Q417	B-11
IC209	D-9	Q418	B-12
IC301	D-2	Q420	D-10
IC302	E-3	Q421	D-10
IC303	B-2	Q422	D-10
IC304	A-1	Q423	B-9
IC305	C-4	Q424	C-10
IC306	D-5	Q432	B-10
IC307	A-3	Q451	D-11
IC308	C-4	Q452	D-11
IC309	D-7	Q453	D-12
IC310	E-2	Q458	D-12
IC312	C-8	Q459	D-12
IC313	E-5		
IC401	A-10		
IC402	A-9		
IC403	B-12		
IC404	B-11		
IC405	B-10		
IC451	C-10		
IC452	D-10		
IC453	A-12		
IC901	H-9		
IC902	G-12		
IC903	J-11		
IC904	H-13		
IC905	I-8		
IC906	J-10		
IC907	I-9		
IC908	G-11		
IC909	G-8		
IC910	I-13		
Q001	B-7		
Q002	A-7		
Q003	A-7		
Q004	A-7		
Q005	I-6		
Q006	I-5		
Q007	I-7		
Q008	I-6		
Q009	J-6		
Q010	J-4		
Q011	I-3		
Q012	J-4		
Q013	J-4		
Q014	J-3		
Q015	I-3		

MB-40 BOARD



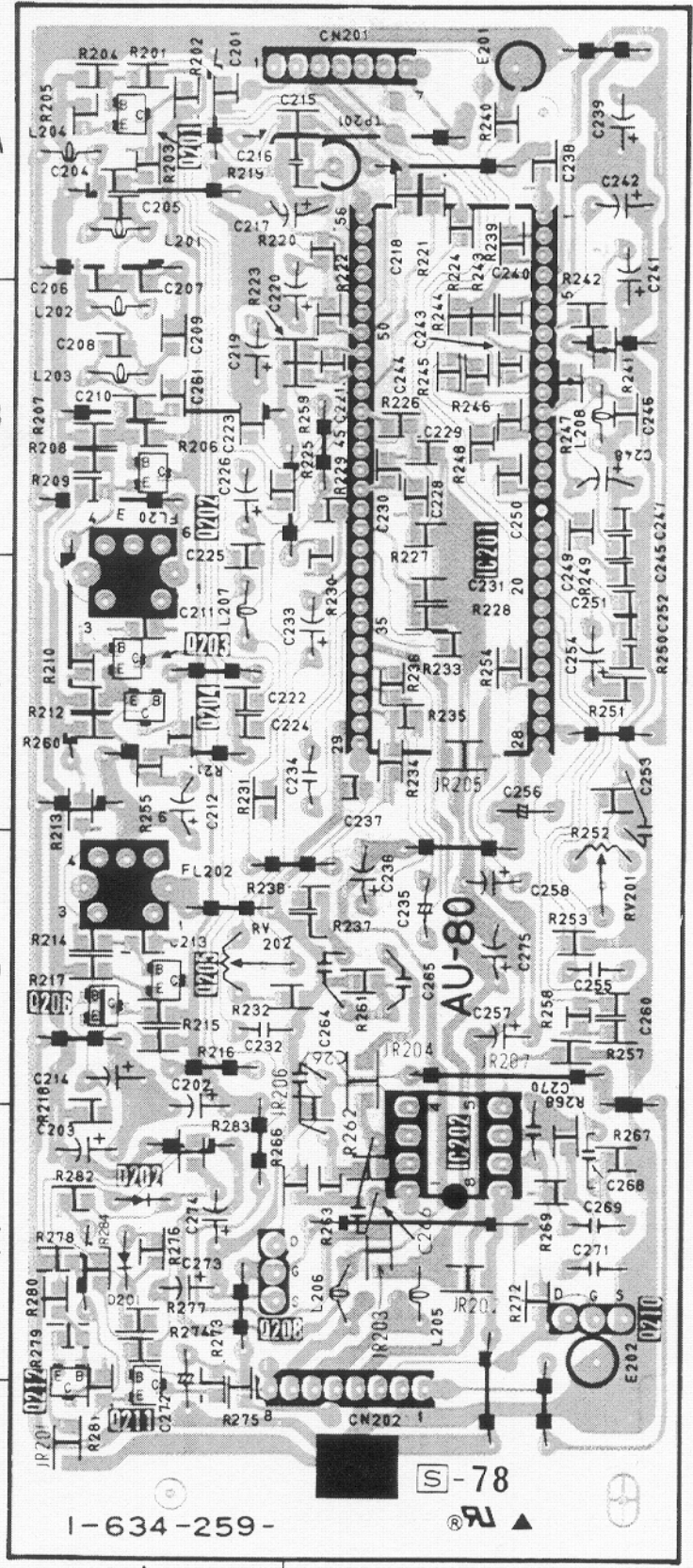




1 2 3 4 5 6 7

A  
B  
C  
D  
E  
F  
G  
H  
I  
J

**AU-80 BOARD**

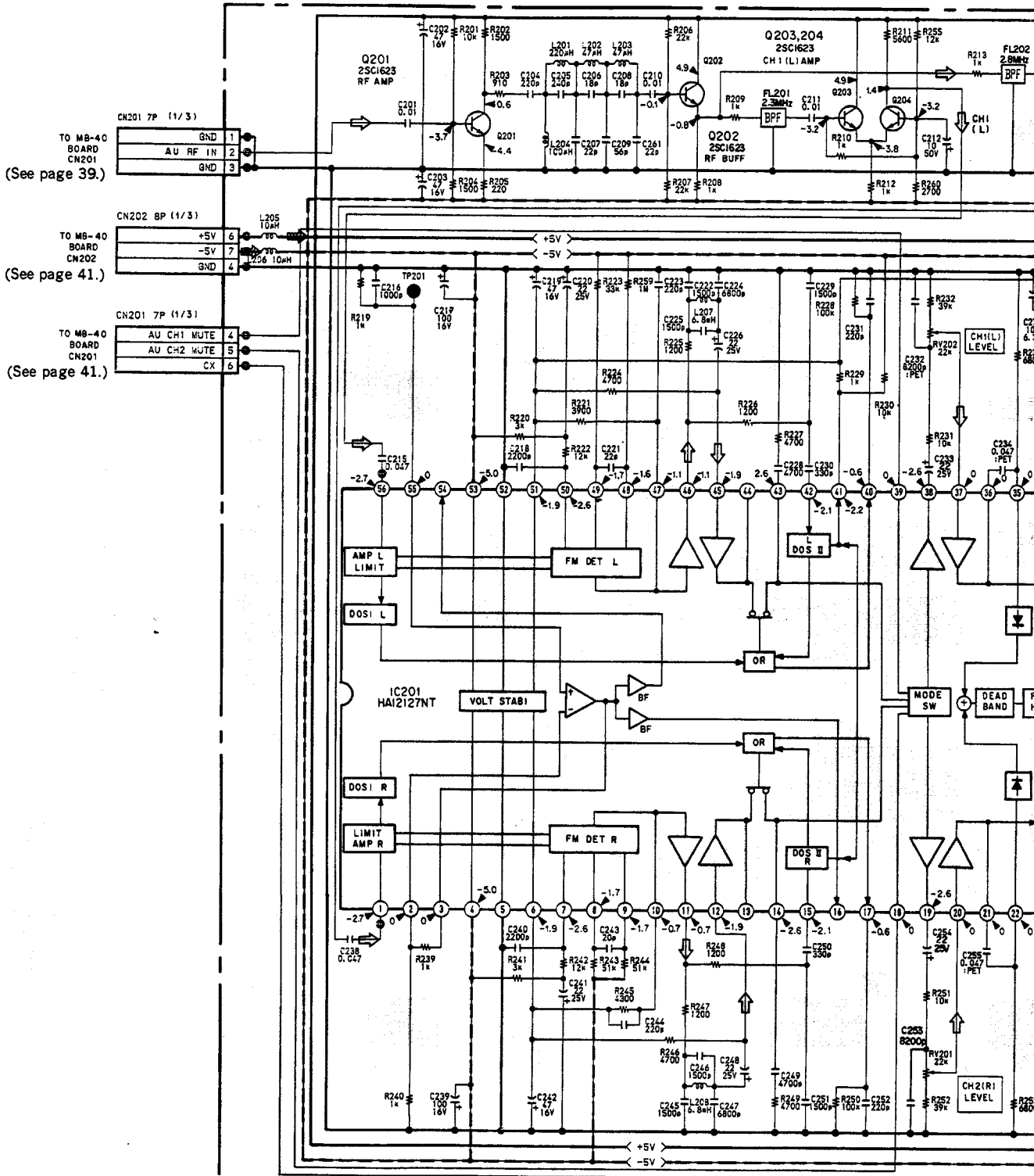


D201	E-1	
D202	E-1	
IC201	B-2	
IC202	E-2	
Q201	A-1	
Q202	B-1	(See pa
Q203	C-1	
Q204	C-1	
Q205	D-1	
Q206	D-1	
Q208	E-1	
Q210	E-2	(See pa
Q211	F-1	
Q212	F-1	

1-634-259-

S-78





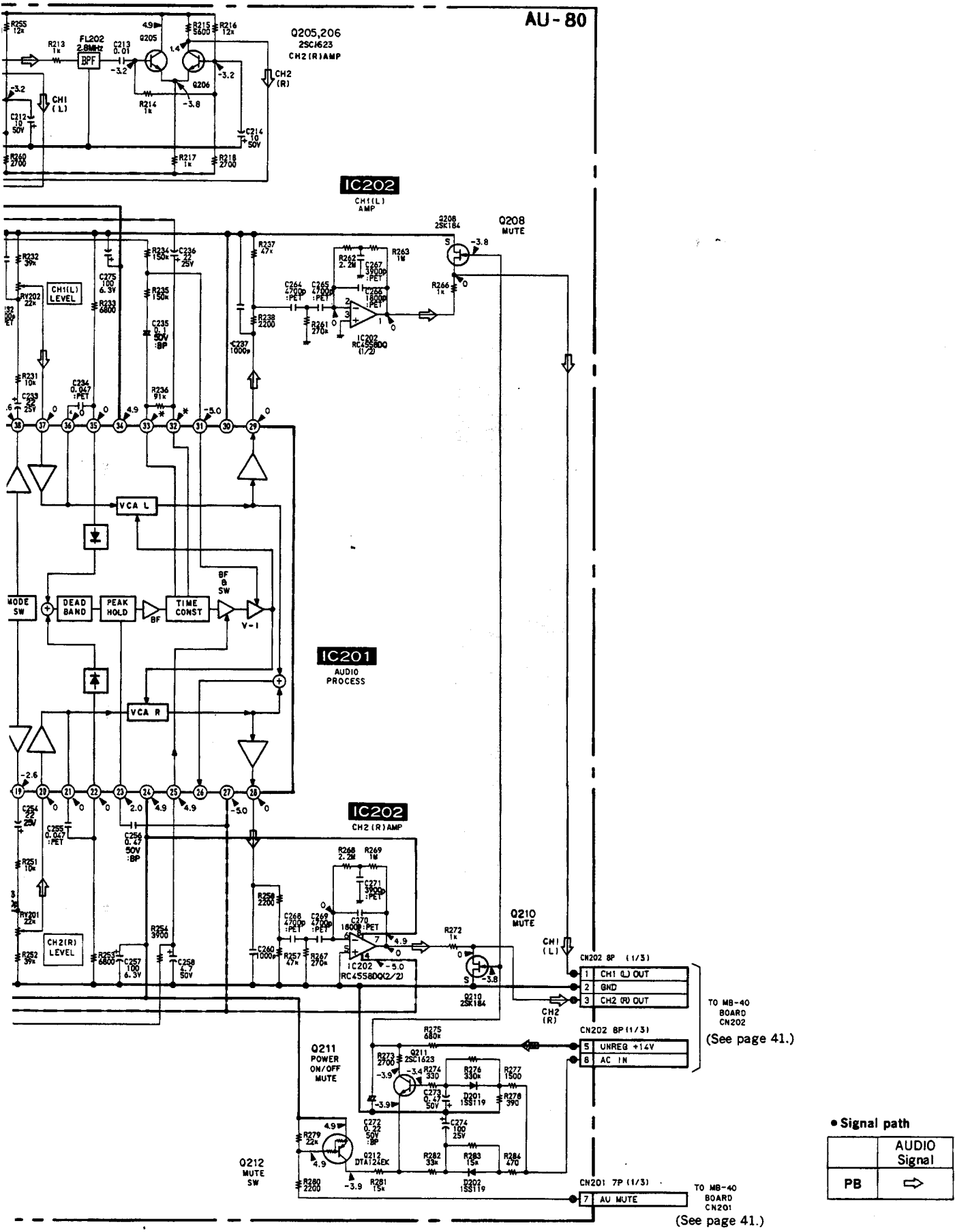
TO MB-40 BOARD  
CN201  
(See page 39.)

TO MB-40 BOARD  
CN202  
(See page 41.)

TO MB-40 BOARD  
CN201  
(See page 41.)

no mark : PB mode  
\* : impossible to measure the voltage of the marked points.

**AU-80**



TO MB-40 BOARD CN202 (See page 41.)

TO MB-40 BOARD CN201 (See page 41.)

• Signal path

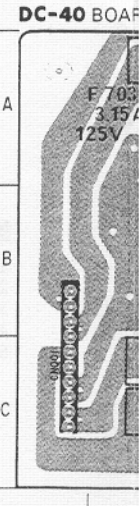
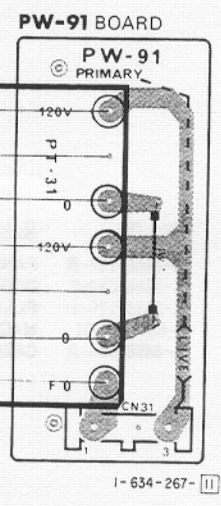
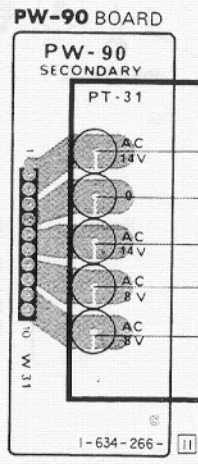
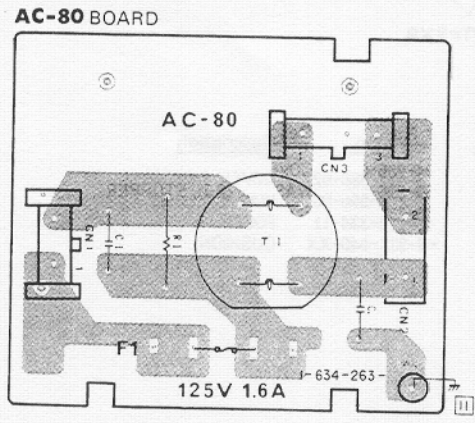
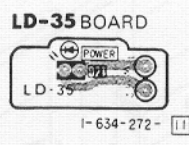
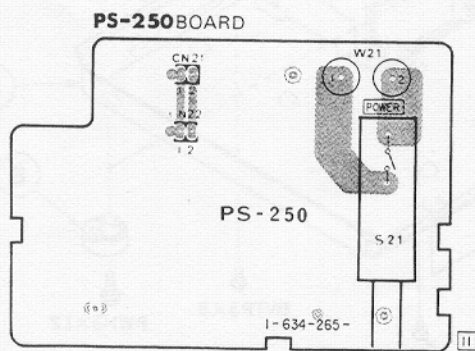
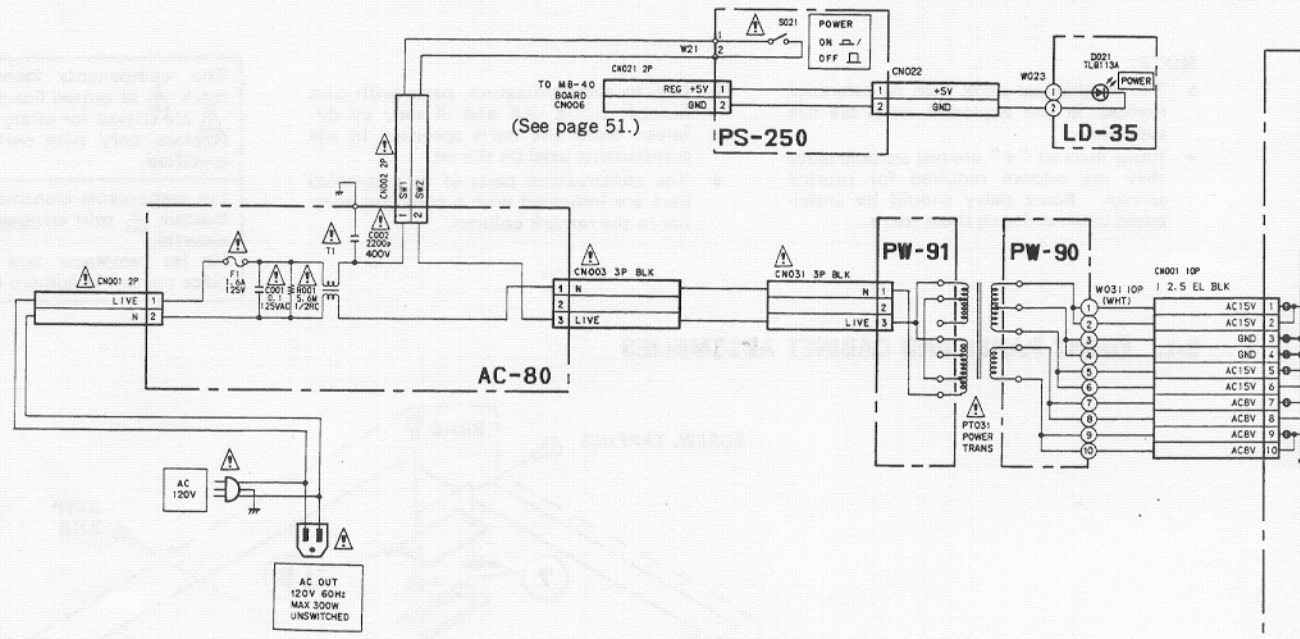
	AUDIO Signal
PB	⇒

**AUDIO AUDIO, POWER**



1 2 3 4 5 6 7

A  
B  
C  
D  
E  
F  
G  
H  
I  
J



8

9

10

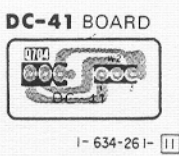
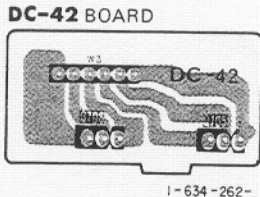
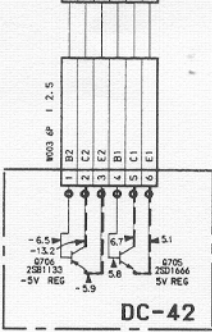
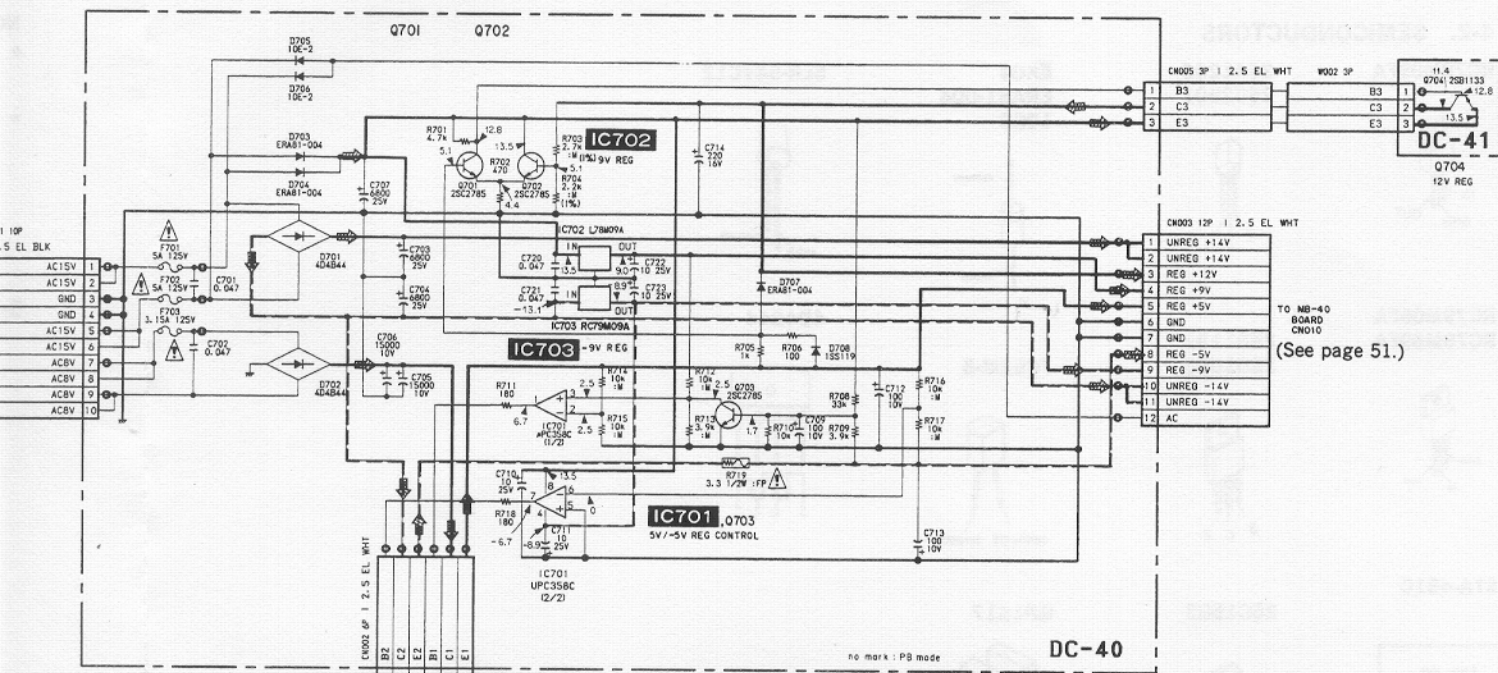
11

12

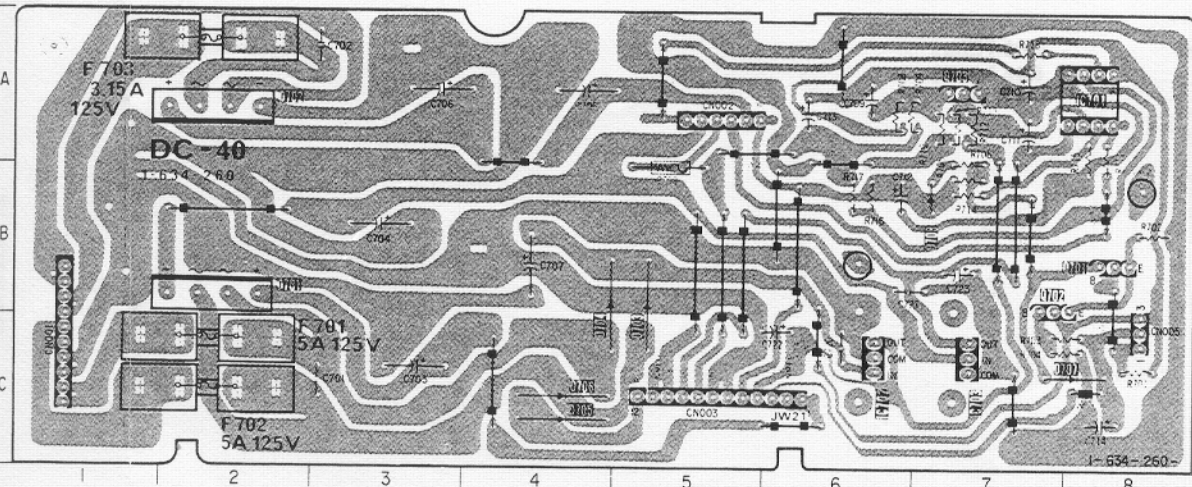
13

14

15



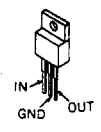
**DC-40 BOARD**



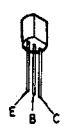
- D701 B-2
- D702 A-2
- D703 B-5
- D704 B-4
- D705 C-4
- D706 C-4
- D707 C-8
- D708 B-7
  
- IC701 A-8
- IC702 C-6
- IC703 C-7
  
- Q701 B-8
- Q702 B-7
- Q703 A-7

**4-2. SEMICONDUCTORS**

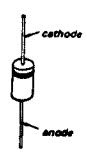
**RC78M09FA**



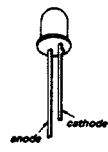
**2SA1206  
2SC2901**



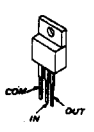
**EK04  
ERA81-004  
10E2**



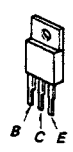
**SLR-54VC12**



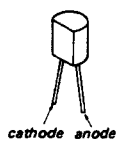
**RC79M05FA  
RC79M09FA**



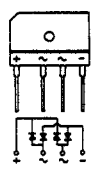
**2SB1133  
2SD1666**



**FC52M-5**



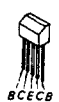
**4D4B44**



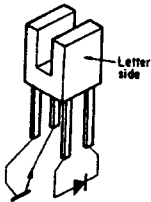
**STA-451C**



**2SC1583**



**GP1S17**



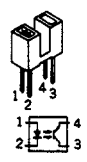
**DTC124ES**



**2SD789**



**GP1S54**



**2SA1015  
2SC1815**



**2SK184**



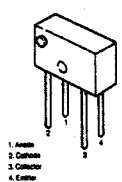
**PY5504S-1**



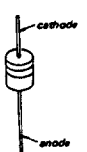
**2SA1175  
2SC2785**



**EE-SF5-B**



**RD2.7ESB1  
RD6.8ESB1  
1SS119**






## SECTION 5 EXPLODED VIEWS

**NOTE:**

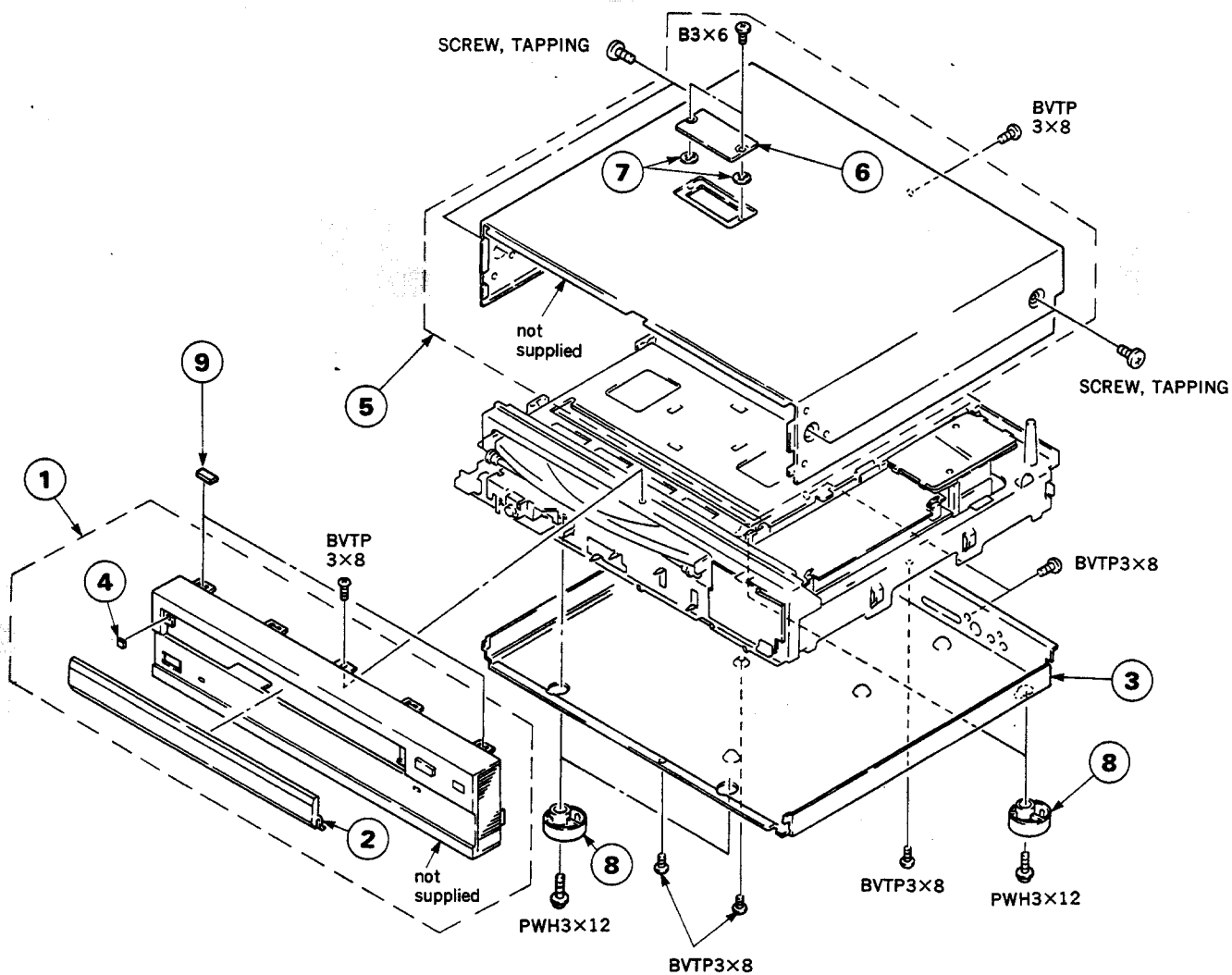
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- The construction parts of an assembled part are indicated with a collation number in the remark column.

The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

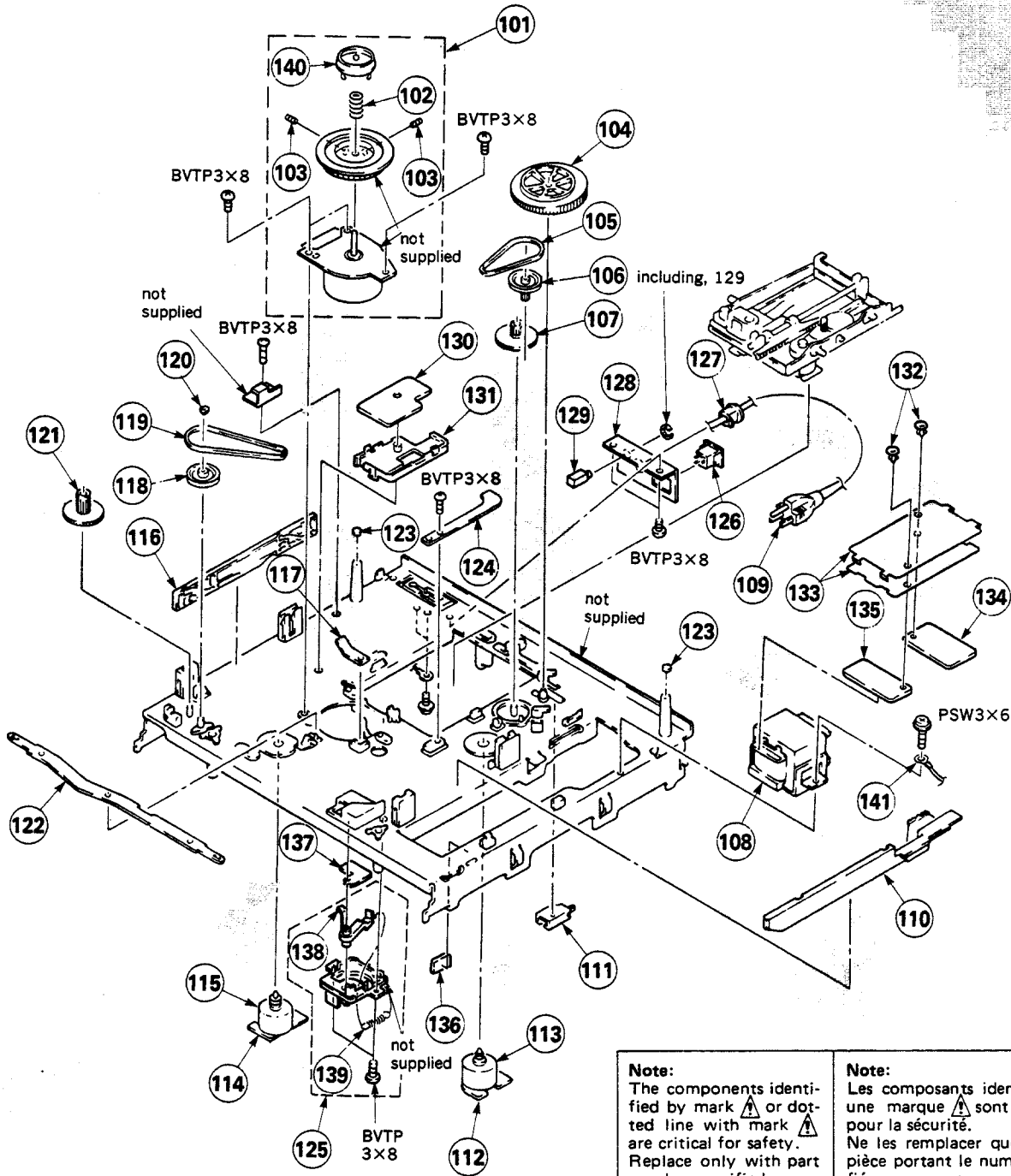
Les composants identifiés par une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

### 5-1. FRONT PANEL AND CABINET ASSEMBLIES



No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
1	A-6408-157-B	PANEL ASSY, FRONT		6	3-694-986-02	COVER, WINDOW	
2	X-3688-280-2	DOOR ASSY, FRONT	2, 4	7	3-669-596-00	WASHER (2.3), STOPPER	
3	X-3688-279-1	PLATE ASSY, BOTTOM		8	3-713-334-11	FOOT	
4	3-684-461-01	MAGNET, POCKET LOCK		9	*9-911-840-XX	CUSHION	
5	A-6408-094-A	CASE ASSY, UPPER	6, 7				



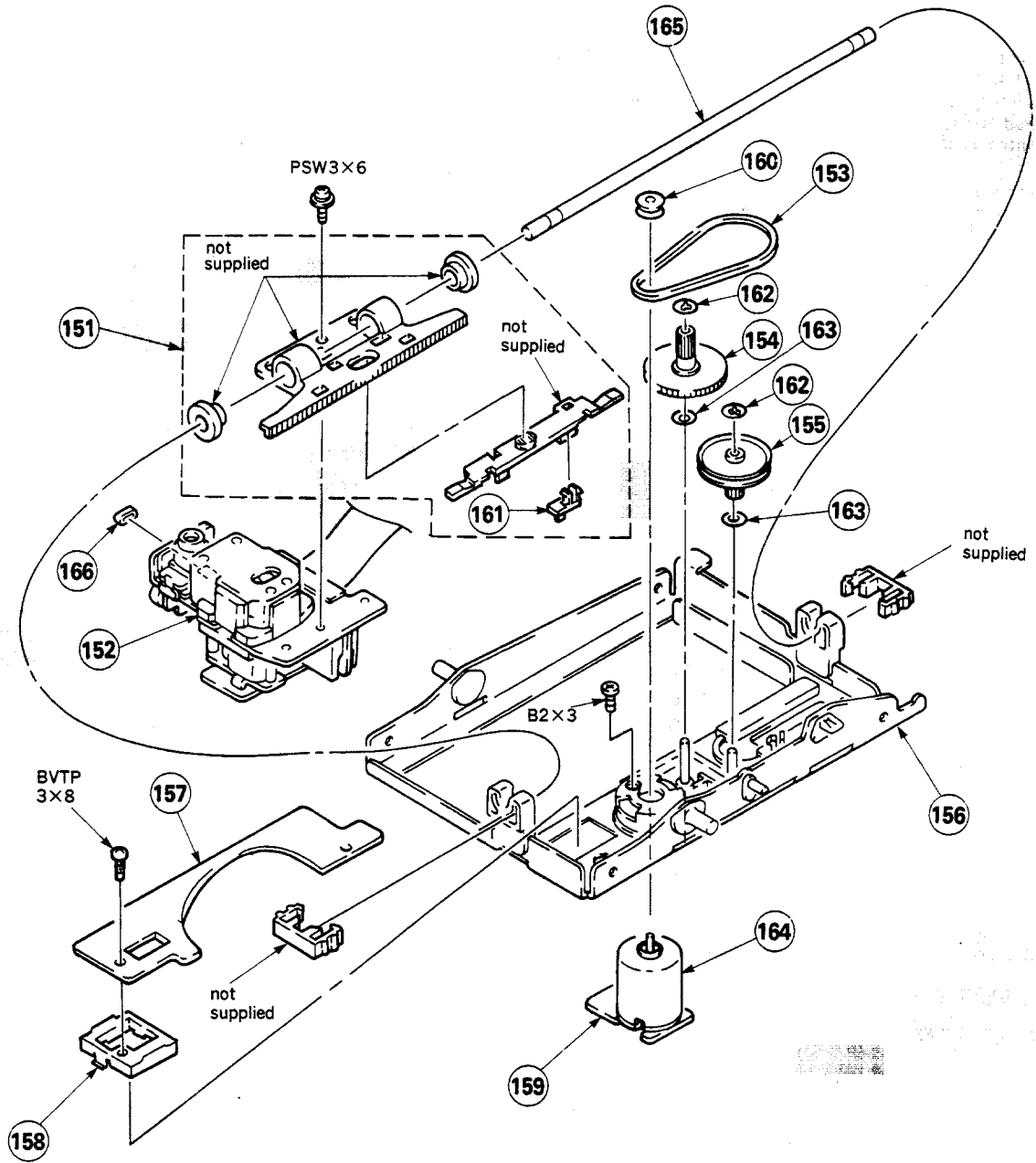


**Note:**  
The components identified by mark  $\triangle$  or dotted line with mark  $\triangle$  are critical for safety. Replace only with part number specified.

**Note:**  
Les composants identifiés par une marque  $\triangle$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
101	A-6491-037-A	MOTOR ASSY, SPINDLE (M901)	102, 103, 140	122	3-713-282-01	PLATE, PHASE	
102	3-713-295-01	SPRING, COMPRESSION		123	3-713-326-01	STOPPER	
103	3-715-914-01	SCREW (WP) (M2.6X6)		124	3-713-327-01	SPRING	
104	3-713-286-11	CAM, DRIVING		125	X-3688-274-4	SWITCH SUB ASSY, O/C	138, 139
105	3-307-366-00	BELT, FAST FORWARD		126	$\triangle$ 1-526-920-12	AC OUTLET (WITH EARTH)	
106	3-713-317-01	PULLEY		127	$\triangle$ 2-045-063-01	STOPPER, CORD	
107	3-713-287-11	GEAR (C)		128	3-698-669-04	BRACKET, OUTLET	
108	$\triangle$ 1-449-667-11	TRANSFORMER, POWER (PT031)		129	1-507-195-21	SPECIAL REMOTE CONTROL JACK (J301)	
109	$\triangle$ 1-534-517-81	CORD, POWER (SJT)		130	*1-634-270-11	SW-152 BOARD	
110	3-713-281-01	RACK (RIGHT)		131	*3-728-446-01	HOLDER, SW PC BOARD	
111	1-570-810-11	SWITCH, PUSH (1 KEY) (CHUCK) (S301)		132	3-531-576-11	RIVET	
112	*1-634-274-11	MD-43 BOARD		133	*X-3688-275-1	SHEET ASSY, INSULATING	
113	X-3713-206-1	MOTOR BLOCK ASSY, SKEW (M902)		134	*1-634-266-11	PW-90 BOARD	
114	*1-634-275-11	MD-44 BOARD		135	*1-634-267-11	PW-91 BOARD	
115	X-3713-208-1	MOTOR ASSY, LD (M903)		136	*1-634-261-11	DC-41 BOARD	
116	3-713-280-03	RACK (LEFT)		137	*1-634-271-11	SW-153 BOARD	
117	*1-634-268-11	SW-150 BOARD		138	3-728-433-01	SHUTTER, SWITCH, O/C	
118	3-713-289-01	PULLEY (A)		139	3-578-393-00	SPRING, TENSION	
119	3-657-035-XX	BELT, RM		140	X-3688-254-4	GUIDE ASSY, CENTER	
120	*4-910-418-01	BUSHING (DIA. 4)		141	1-535-316-11	TERMINAL, GROUND (M4)	
121	3-713-290-01	GEAR (A), DRIVING					

5-4. BASE ASSEMBLY



<p><b>Note:</b> The components identified by mark <math>\triangle</math> or dotted line with mark <math>\triangle</math> are critical for safety. Replace only with part number specified.</p>	<p><b>Note:</b> Les composants identifiés par une marque <math>\triangle</math> sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.</p>
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No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
151	*X-3688-271-4	RACK ASSY		159	*1-634-273-11	MD-42 BOARD	
152	$\triangle$ 8-848-069-01	DEVICE, OPTICS KSC-120A	161	160	3-728-483-01	PULLEY, MOTOR	
153	3-728-485-01	BELT, TIMING		161	3-728-419-01	SHUTTER	
154	3-728-479-01	GEAR, PINION		162	3-669-465-00	WASHER (1.5), STOPPER	
155	3-728-482-01	PULLEY (A)		163	3-701-437-01	WASHER	
156	*X-3688-283-1	BASE ASSY, SKEW		164	1-541-659-11	MOTOR, SLIDE (M904)	
157	*1-634-269-11	SW-151 BOARD		165	*X-3688-277-1	SHAFT ASSY, FEED	
158	3-698-672-03	TABEL, SWITCH		166	3-745-402-01	RUBBER, STOPPER	

## SECTION 6 ELECTRICAL PARTS LIST

**DC-40**

**PS-250**

**LD-35**

**NOTE:**

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

**CAPACITORS:**  
MF:  $\mu$ F, PF:  $\mu$  $\mu$ F.

**RESISTORS**  
• All resistors are in ohms.  
• F: nonflammable

**COILS**  
• MMH: mH, UH:  $\mu$ H

**SEMICONDUCTORS**  
In each case, U:  $\mu$ , for example:  
UA....:  $\mu$ A...., UPA....:  $\mu$ PA....,  
UPC....:  $\mu$ PC, UPD....:  $\mu$ PD....

The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

No.	Part No.	Description	Remark
	*A-6421-422-A	DC-40 BOARD, COMPLETE (Ref. No. 6000 Series)	
*****			

$\Delta$ 1-533-189-11	HOLDER, FUSE
*3-309-144-21	HEAT SINK
7-685-646-79	SCREW BVTP 3X8 TYPE2 SLIT
7-685-648-79	SCREW BVTP 3X12 TYPE2 SLIT

CAPACITOR

C701	1-161-059-00	CERAMIC	0.047MF	10%	50V
C702	1-161-059-00	CERAMIC	0.047MF	10%	50V
C703	1-124-771-00	ELECT	6800MF	20%	25V
C704	1-124-771-00	ELECT	6800MF	20%	25V
C705	1-126-091-11	ELECT	15000MF	20%	10V
C706	1-126-091-11	ELECT	15000MF	20%	10V
C707	1-124-771-00	ELECT	6800MF	20%	25V
C709	1-124-443-00	ELECT	100MF	20%	10V
C710	1-126-096-11	ELECT	10MF	20%	25V
C711	1-126-096-11	ELECT	10MF	20%	25V
C712	1-124-443-00	ELECT	100MF	20%	10V
C713	1-124-443-00	ELECT	100MF	20%	10V
C714	1-124-120-11	ELECT	220MF	20%	16V
C720	1-161-059-00	CERAMIC	0.047MF	10%	50V
C721	1-161-059-00	CERAMIC	0.047MF	10%	50V
C722	1-126-096-11	ELECT	10MF	20%	25V
C723	1-126-096-11	ELECT	10MF	20%	25V

CONNECTOR

CN001	*1-560-898-00	PIN, CONNECTOR 10P
CN002	*1-560-894-00	PIN, CONNECTOR 6P
CN003	*1-560-900-00	PIN, CONNECTOR 12P
CN005	*1-560-891-00	PIN, CONNECTOR 3P

DIODE

D701	8-719-801-74	DIODE 4D4B44
D702	8-719-801-74	DIODE 4D4B44
D703	8-719-981-01	DIODE ERA81-004
D704	8-719-981-01	DIODE ERA81-004
D705	8-719-200-02	DIODE 10E-2
D706	8-719-200-02	DIODE 10E-2
D707	8-719-981-01	DIODE ERA81-004
D708	8-719-911-19	DIODE 1SS119

FUSE

F701	$\Delta$ 1-532-747-11	FUSE, GLASS TUBE (5A 125V)
F702	$\Delta$ 1-532-747-11	FUSE, GLASS TUBE (5A 125V)
F703	$\Delta$ 1-532-745-11	FUSE, GLASS TUBE (3.15A 125V)

IC

IC701	8-759-135-80	IC UPC358C
IC702	8-759-982-34	IC RC78M09FA
IC703	8-759-982-54	IC RC79M09FA

No.	Part No.	Description	Remark
<u>TRANSISTOR</u>			
Q701	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q702	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q703	8-729-119-78	TRANSISTOR 2SC2785-HFE	

RESISTOR

R701	1-249-425-11	CARBON	4.7K	5%	1/4W
R702	1-249-413-11	CARBON	470	5%	1/4W
R703	1-215-431-00	METAL	2.7K	1%	1/6W
R704	1-215-429-00	METAL	2.2K	1%	1/6W
R705	1-249-417-11	CARBON	1K	5%	1/4W
R706	1-249-405-11	CARBON	100	5%	1/4W
R708	1-249-435-11	CARBON	33K	5%	1/4W
R709	1-249-424-11	CARBON	3.9K	5%	1/4W
R710	1-249-429-11	CARBON	10K	5%	1/4W
R711	1-249-408-11	CARBON	180	5%	1/4W
R712	1-215-445-00	METAL	10K	1%	1/6W
R713	1-215-435-00	METAL	3.9K	1%	1/6W
R714	1-215-445-00	METAL	10K	1%	1/6W
R715	1-215-445-00	METAL	10K	1%	1/6W
R716	1-215-445-00	METAL	10K	1%	1/6W
R717	1-215-445-00	METAL	10K	1%	1/6W
R718	1-249-408-11	CARBON	180	5%	1/4W
R719	$\Delta$ 1-212-946-51	FUSIBLE	3.3	5%	1/2W F

\*\*\*\*\*  
\*1-634-265-11 PS-250 BOARD (Ref. No. 8000 Series)  
\*\*\*\*\*

3-715-933-01 HOLDER, HP

CONNECTOR

CN021	*1-506-467-11	PIN, CONNECTOR 2P
CN022	*1-506-467-11	PIN, CONNECTOR 2P

SWITCH

S021	$\Delta$ 1-554-920-11	SWITCH, PUSH (AC POWER)(1 KEY) (POWER)
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\*1-634-272-11 LD-35 BOARD (Ref. No. 8000 Series)  
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\*3-728-437-02 HOLDER, LED, PC BOARD

DIODE

D021	8-719-955-04	DIODE PY5504S-1 (POWER)
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No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
A-6421-424-A MB-40 BOARD, COMPLETE (Ref. No. 7000 Series)				C056	1-163-019-00	CERAMIC CHIP	0.0068MF 10% 50V
*****				C057	1-126-529-11	ELECT	0.47MF 20% 50V
Including the AU-80				C058	1-126-529-11	ELECT	0.47MF 20% 50V
and CB-31 boards				C059	1-164-232-11	CERAMIC CHIP	0.01MF 50V
1-540-044-11	SOCKET IC 64P (IC901)			C060	1-124-477-11	ELECT	47MF 20% 16V
*3-309-144-21	HEAT SINK			C061	1-124-477-11	ELECT	47MF 20% 16V
*3-682-419-11	HOLDER, P.C.B			C062	1-124-477-11	ELECT	47MF 20% 16V
*3-682-419-31	HOLDER, P.C.B			C063	1-164-232-11	CERAMIC CHIP	0.01MF 50V
*3-710-374-01	PLATE, GROUND			C098	1-163-141-00	CERAMIC CHIP	0.001MF 5% 50V
*7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3			C099	1-163-141-00	CERAMIC CHIP	0.001MF 5% 50V
<b>CAPACITOR</b>				C101	1-163-099-00	CERAMIC CHIP	18PF 5% 50V
C001	1-126-160-11	ELECT	1MF 20% 50V	C102	1-163-099-00	CERAMIC CHIP	18PF 5% 50V
C002	1-163-019-00	CERAMIC CHIP	0.0068MF 10% 50V	C103	1-124-589-11	ELECT	47MF 20% 16V
C003	1-126-160-11	ELECT	1MF 20% 50V	C104	1-164-232-11	CERAMIC CHIP	0.01MF 50V
C004	1-130-491-00	MYLAR	0.047MF 5% 50V	C105	1-163-101-00	CERAMIC CHIP	22PF 5% 50V
C005	1-163-121-00	CERAMIC CHIP	150PF 5% 50V	C106	1-124-589-11	ELECT	47MF 20% 16V
C006	1-163-019-00	CERAMIC CHIP	0.0068MF 10% 50V	C107	1-124-589-11	ELECT	47MF 20% 16V
C007	1-124-589-11	ELECT	47MF 20% 16V	C108	1-164-232-11	CERAMIC CHIP	0.01MF 50V
C008	1-164-232-11	CERAMIC CHIP	0.01MF 50V	C109	1-164-232-11	CERAMIC CHIP	0.01MF 50V
C009	1-164-232-11	CERAMIC CHIP	0.01MF 50V	C110	1-124-589-11	ELECT	47MF 20% 16V
C010	1-124-477-11	ELECT	47MF 20% 16V	C111	1-124-589-11	ELECT	47MF 20% 16V
C011	1-164-232-11	CERAMIC CHIP	0.01MF 50V	C112	1-164-232-11	CERAMIC CHIP	0.01MF 50V
C012	1-124-589-11	ELECT	47MF 20% 16V	C113	1-163-141-00	CERAMIC CHIP	0.001MF 5% 50V
C013	1-130-471-00	MYLAR	0.001MF 5% 50V	C114	1-163-137-00	CERAMIC CHIP	680PF 5% 50V
C014	1-163-109-00	CERAMIC CHIP	47PF 5% 50V	C115	1-126-163-11	ELECT	4.7MF 20% 50V
C015	1-163-103-00	CERAMIC CHIP	27PF 5% 50V	C121	1-163-109-00	CERAMIC CHIP	47PF 5% 50V
C016	1-163-105-00	CERAMIC CHIP	33PF 5% 50V	C122	1-163-125-00	CERAMIC CHIP	220PF 5% 50V
C017	1-163-117-00	CERAMIC CHIP	100PF 5% 50V	C123	1-130-485-00	MYLAR	0.015MF 5% 50V
C018	1-163-011-11	CERAMIC CHIP	0.0015MF 10% 50V	C124	1-126-529-11	ELECT	0.47MF 20% 50V
C019	1-163-125-00	CERAMIC CHIP	220PF 5% 50V	C125	1-164-232-11	CERAMIC CHIP	0.01MF 50V
C020	1-163-035-00	CERAMIC CHIP	0.047MF 50V	C126	1-124-589-11	ELECT	47MF 20% 16V
C021	1-163-035-00	CERAMIC CHIP	0.047MF 50V	C127	1-163-137-00	CERAMIC CHIP	680PF 5% 50V
C022	1-163-129-00	CERAMIC CHIP	330PF 5% 50V	C128	1-130-494-11	MYLAR	0.082MF 5% 50V
C023	1-126-157-11	ELECT	10MF 20% 16V	C129	1-124-589-11	ELECT	47MF 20% 16V
C024	1-126-160-11	ELECT	1MF 20% 50V	C130	1-164-232-11	CERAMIC CHIP	0.01MF 50V
C025	1-124-589-11	ELECT	47MF 20% 16V	C131	1-126-103-11	ELECT	470MF 20% 16V
C026	1-124-589-11	ELECT	47MF 20% 16V	C201	1-124-767-00	ELECT	2.2MF 20% 50V
C027	1-164-232-11	CERAMIC CHIP	0.01MF 50V	C202	1-130-471-00	MYLAR	0.001MF 5% 50V
C028	1-164-232-11	CERAMIC CHIP	0.01MF 50V	C204	1-130-476-00	MYLAR	0.0027MF 5% 50V
C029	1-124-589-11	ELECT	47MF 20% 16V	C206	1-130-489-00	MYLAR	0.033MF 5% 50V
C030	1-164-232-11	CERAMIC CHIP	0.01MF 50V	C207	1-130-478-00	MYLAR	0.0039MF 5% 50V
C031	1-163-035-00	CERAMIC CHIP	0.047MF 50V	C220	1-163-093-00	CERAMIC CHIP	10PF 5% 50V
C032	1-163-111-00	CERAMIC CHIP	56PF 5% 50V	C222	1-163-019-00	CERAMIC CHIP	0.0068MF 10% 50V
C033	1-163-117-00	CERAMIC CHIP	100PF 5% 50V	C223	1-163-019-00	CERAMIC CHIP	0.0068MF 10% 50V
C034	1-164-182-11	CERAMIC CHIP	0.0033MF 10% 50V	C224	1-124-446-11	ELECT	47MF 20% 10V
C035	1-163-035-00	CERAMIC CHIP	0.047MF 50V	C227	1-124-589-11	ELECT	47MF 20% 16V
C036	1-124-589-11	ELECT	47MF 20% 16V	C228	1-130-471-00	MYLAR	0.001MF 5% 50V
C037	1-124-477-11	ELECT	47MF 20% 16V	C229	1-130-471-00	MYLAR	0.001MF 5% 50V
C038	1-124-477-11	ELECT	47MF 20% 16V	C230	1-130-471-00	MYLAR	0.001MF 5% 50V
C039	1-163-117-00	CERAMIC CHIP	100PF 5% 50V	C231	1-124-477-11	ELECT	47MF 20% 25V
C040	1-164-232-11	CERAMIC CHIP	0.01MF 50V	C232	1-130-471-00	MYLAR	0.001MF 5% 50V
C041	1-163-103-00	CERAMIC CHIP	27PF 5% 50V	C233	1-126-157-11	ELECT	10MF 20% 16V
C043	1-163-117-00	CERAMIC CHIP	100PF 5% 50V	C234	1-130-495-00	MYLAR	0.1MF 5% 50V
C044	1-126-101-11	ELECT	100MF 20% 16V	C235	1-124-477-11	ELECT	47MF 20% 25V
C045	1-163-035-00	CERAMIC CHIP	0.047MF 50V	C236	1-124-589-11	ELECT	47MF 20% 16V
C046	1-163-105-00	CERAMIC CHIP	33PF 5% 50V	C237	1-130-471-00	MYLAR	0.001MF 5% 50V
C047	1-163-035-00	CERAMIC CHIP	0.047MF 50V	C238	1-163-141-00	CERAMIC CHIP	0.001MF 5% 50V
C048	1-163-035-00	CERAMIC CHIP	0.047MF 50V	C239	1-163-141-00	CERAMIC CHIP	0.001MF 5% 50V
C050	1-126-157-11	ELECT	10MF 20% 16V	C240	1-163-141-00	CERAMIC CHIP	0.001MF 5% 50V
C051	1-126-529-11	ELECT	0.47MF 20% 50V	C241	1-163-141-00	CERAMIC CHIP	0.001MF 5% 50V
C052	1-126-529-11	ELECT	0.47MF 20% 50V	C242	1-163-141-00	CERAMIC CHIP	0.001MF 5% 50V
C053	1-163-093-00	CERAMIC CHIP	10PF 5% 50V	C244	1-163-141-00	CERAMIC CHIP	0.001MF 5% 50V
C054	1-163-093-00	CERAMIC CHIP	10PF 5% 50V	C300	1-163-105-00	CERAMIC CHIP	33PF 5% 50V
C055	1-163-019-00	CERAMIC CHIP	0.0068MF 10% 50V	C301	1-164-232-11	CERAMIC CHIP	0.01MF 50V

When indicating parts by reference number, please include the board name.



Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
CN002	1-506-483-21	PIN, CONNECTOR 4P		IC003	8-759-202-24	IC TC74HC86P	
CN003	1-506-467-11	PIN, CONNECTOR 2P		IC004	8-759-927-56	IC BA7021	
CN004	1-506-470-11	PIN, CONNECTOR 5P		IC005	8-759-988-96	IC MB89010A-109A	
CN005	*1-560-893-00	PIN, CONNECTOR 5P		IC006	8-759-927-56	IC BA7021	
CN006	1-506-467-11	PIN, CONNECTOR 2P		IC101	8-759-207-28	IC TC9015P	
CN009	*1-564-028-00	PIN, CONNECTOR 3P		IC102	8-759-208-10	IC TC4053BPHB	
CN010	*1-560-900-00	PIN, CONNECTOR 12P		IC103	8-759-202-24	IC SN74LS221N	
CN020	1-506-467-11	PIN, CONNECTOR 2P		IC104	8-759-916-12	IC TC74HC00N	
CN022	1-506-469-11	PIN, CONNECTOR 4P		IC105	8-759-916-12	IC TC74HC00N	
CN024	1-506-468-11	PIN, CONNECTOR 3P		IC106	8-759-938-56	IC MB88201H-523M	
CN025	1-506-470-11	PIN, CONNECTOR 5P		IC107	8-759-245-55	IC TC4555BP	
CN026	1-506-467-11	PIN, CONNECTOR 2P		IC121	8-759-912-64	IC PA0009	
CN027	1-506-467-11	PIN, CONNECTOR 2P		IC201	8-759-208-10	IC TC4053BPHB	
CN028	1-506-470-11	PIN, CONNECTOR 5P		IC202	8-752-322-98	IC CXD1091S	
CN029	1-506-469-11	PIN, CONNECTOR 4P		IC203	8-759-240-11	IC TC4011BP	
CN115	*1-564-037-11	PIN, CONNECTOR 12P		IC205	8-759-345-38	IC HD14538BP	
CN201	*1-566-705-11	CONNECTOR, BOARD TO BOARD 7P		IC206	8-759-345-38	IC HD14538BP	
CN202	1-565-778-11	CONNECTOR, BOARD TO BOARD 8P		IC207	8-759-345-38	IC HD14538BP	
CN401	*1-560-899-00	PIN, CONNECTOR 11P		IC208	8-759-240-24	IC TC4024BP	
CN901	1-506-467-11	PIN, CONNECTOR 2P		IC209	8-759-345-38	IC HD14538BP	
CN902	1-506-471-11	PIN, CONNECTOR 6P		IC301	8-759-981-95	IC RC4558S	
<u>CONNECTOR</u>				IC302	8-759-981-95	IC RC4558S	
CNJ101	1-562-635-11	RECEPTACLE, BNC (VIDEO OUT)		IC303	8-759-981-92	IC RC4558M	
CNJ201	*1-562-999-21	JACK, PIN 2P (2/R, 1/L LINE OUT)		IC304	8-759-981-65	IC LM2903M	
CNJ901	1-563-161-11	CONNECTOR, D-SUB 25P (RS-232C)		IC305	8-749-920-75	IC STA-451C	
<u>VARIABLE CAPACITOR</u>				IC306	8-759-981-95	IC RC4558S	
CV101	1-141-304-21	TRIMMER, CERAMIC (10P)		IC307	8-759-981-92	IC RC4558M	
<u>DIODE</u>				IC308	8-749-920-75	IC STA-451C	
D001	8-719-400-18	DIODE MA152WK		IC309	8-759-981-95	IC RC4558S	
D002	8-719-907-19	DIODE FC52M-5		IC310	8-759-981-95	IC RC4558S	
D005	8-719-800-76	DIODE 1SS226		IC312	8-759-982-52	IC RC79M05FA	
D101	8-719-400-18	DIODE MA152WK		IC313	8-759-321-40	IC HA11529	
D102	8-719-400-18	DIODE MA152WK		IC401	8-759-981-95	IC RC4558S	
D103	8-719-400-18	DIODE MA152WK		IC402	8-759-208-10	IC TC4053BPHB	
D121	8-719-400-18	DIODE MA152WK		IC403	8-759-305-31	IC STA302A	
D201	8-719-914-44	DIODE DAP202K		IC404	8-759-305-32	IC STA303A	
D202	8-719-914-44	DIODE DAP202K		IC405	8-759-981-95	IC RC4558S	
D204	8-719-914-44	DIODE DAP202K		IC451	8-759-981-95	IC RC4558S	
D206	8-719-400-18	DIODE MA152WK		IC452	8-759-981-68	IC LM2903S	
D300	8-719-911-19	DIODE 1SS119		IC453	8-759-205-83	IC TA7713P	
D301	8-719-109-96	DIODE RD6.8ESB1		IC901	8-759-305-17	IC HD637A01Y0P	
D302	8-719-911-19	DIODE 1SS119		IC902	8-759-631-98	IC M60014-0120FP	
D307	8-719-109-59	DIODE RD2.7ESB1		IC903	8-759-103-27	IC UPD8251AFC	
D310	8-719-911-19	DIODE 1SS119		IC904	8-759-913-99	IC MB88201-173N	
D403	8-719-800-76	DIODE 1SS226		IC905	8-759-008-98	IC MC14040BF	
D431	8-719-800-76	DIODE 1SS226		IC906	8-759-011-83	IC MC145406P	
D432	8-719-800-76	DIODE 1SS226		IC907	8-759-927-46	IC SN74HC00NS	
D451	8-719-800-76	DIODE 1SS226		IC908	8-759-008-79	IC MC14011BF	
D452	8-719-200-02	DIODE 10E-2		IC909	8-759-000-99	IC MC74HC74N	
D453	8-719-200-02	DIODE 10E-2		IC910	8-759-602-54	IC CX20106A	
D454	8-719-800-76	DIODE 1SS226		<u>JUMPER RESISTOR</u>			
<u>FILTER</u>				JR001	1-216-295-00	METAL GLAZE	0 5% 1/10W
FL001	1-409-431-11	COIL, TRAP (3.58M)		JR002	1-216-295-00	METAL GLAZE	0 5% 1/10W
<u>CONNECTOR</u>				JR003	1-216-295-00	METAL GLAZE	0 5% 1/10W
FN001	1-563-510-11	CONNECTOR, FPC.FFC 24P		JR004	1-216-295-00	METAL GLAZE	0 5% 1/10W
<u>IC</u>				JR005	1-216-295-00	METAL GLAZE	0 5% 1/10W
IC001	8-759-902-21	IC SN74LS221N		JR006	1-216-295-00	METAL GLAZE	0 5% 1/10W
IC002	8-759-945-58	IC RC4558P		JR007	1-216-295-00	METAL GLAZE	0 5% 1/10W
				JR008	1-216-295-00	METAL GLAZE	0 5% 1/10W
				JR009	1-216-295-00	METAL GLAZE	0 5% 1/10W
				JR010	1-216-295-00	METAL GLAZE	0 5% 1/10W
				JR011	1-216-295-00	METAL GLAZE	0 5% 1/10W
				JR012	1-216-295-00	METAL GLAZE	0 5% 1/10W
				JR013	1-216-296-00	METAL GLAZE	0 5% 1/8W
				JR014	1-216-296-00	METAL GLAZE	0 5% 1/8W

When indicating parts by reference number, please include the board name.

# MB-40

**Note:**  
The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

**Note:**  
Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No	Part No.	Description	Remark
JR016	1-216-296-00	METAL GLAZE 0	5% 1/8W
JR017	1-216-296-00	METAL GLAZE 0	5% 1/8W
JR018	1-216-296-00	METAL GLAZE 0	5% 1/8W
JR019	1-216-296-00	METAL GLAZE 0	5% 1/8W
JR026	1-216-296-00	METAL GLAZE 0	5% 1/8W
JR027	1-216-296-00	METAL GLAZE 0	5% 1/8W
JR029	1-216-296-00	METAL GLAZE 0	5% 1/8W
JR030	1-216-296-00	METAL GLAZE 0	5% 1/8W
JR034	1-216-296-00	METAL GLAZE 0	5% 1/8W
JR035	1-216-296-00	METAL GLAZE 0	5% 1/8W
JR036	1-216-296-00	METAL GLAZE 0	5% 1/8W
JR037	1-216-296-00	METAL GLAZE 0	5% 1/8W
JR038	1-216-296-00	METAL GLAZE 0	5% 1/8W
JR039	1-216-296-00	METAL GLAZE 0	5% 1/8W
JR040	1-216-296-00	METAL GLAZE 0	5% 1/8W
JR041	1-216-296-00	METAL GLAZE 0	5% 1/8W
JR042	1-216-296-00	METAL GLAZE 0	5% 1/8W
JR043	1-216-296-00	METAL GLAZE 0	5% 1/8W

### COIL

L001	1-410-521-11	INDUCTOR 100UH	
L002	1-410-521-11	INDUCTOR 100UH	
L003	1-410-521-11	INDUCTOR 100UH	
L004	1-408-419-00	INDUCTOR 68UH	
L005	1-410-521-11	INDUCTOR 100UH	
L006	1-410-521-11	INDUCTOR 100UH	
L007	1-410-515-11	INDUCTOR 33UH	
L008	1-410-521-11	INDUCTOR 100UH	
L009	1-410-513-11	INDUCTOR 22UH	
L010	1-408-414-00	INDUCTOR 27UH	
L011	1-410-521-11	INDUCTOR 100UH	
L012	1-410-512-11	INDUCTOR 18UH	
L101	1-410-521-11	INDUCTOR 100UH	
L102	1-410-521-11	INDUCTOR 100UH	
L103	1-410-520-11	INDUCTOR 82UH	
L104	1-410-521-11	INDUCTOR 100UH	
L105	1-410-521-11	INDUCTOR 100UH	
L121	1-410-522-11	INDUCTOR 120UH	
L122	1-410-521-11	INDUCTOR 100UH	
L123	1-410-521-11	INDUCTOR 100UH	
L201	1-410-521-11	INDUCTOR 100UH	
L300	1-410-521-11	INDUCTOR 100UH	
L301	1-410-521-11	INDUCTOR 100UH	
L302	1-410-521-11	INDUCTOR 100UH	
L303	1-410-521-11	INDUCTOR 100UH	
L304	1-410-521-11	INDUCTOR 100UH	
L305	1-410-521-11	INDUCTOR 100UH	
L306	1-410-521-11	INDUCTOR 100UH	
L307	1-410-521-11	INDUCTOR 100UH	
L308	1-410-521-11	INDUCTOR 100UH	
L309	1-410-521-11	INDUCTOR 100UH	
L310	1-410-521-11	INDUCTOR 100UH	
L313	1-410-521-11	INDUCTOR 100UH	
L314	1-410-521-11	INDUCTOR 100UH	
L451	1-410-305-12	COIL, CHOKE 400UH	

### IC LINK

PS301	$\Delta$ 1-532-675-00	LINK, IC 1.5A ICP-F38	
PS302	$\Delta$ 1-532-675-00	LINK, IC 1.5A ICP-F38	
PS303	$\Delta$ 1-532-675-00	LINK, IC 1.5A ICP-F38	
PS304	$\Delta$ 1-532-675-00	LINK, IC 1.5A ICP-F38	
PS401	$\Delta$ 1-532-686-00	LINK, IC 2.7A ICP-F75	
PS402	$\Delta$ 1-532-686-00	LINK, IC 2.7A ICP-F75	

Ref.No	Part No.	Description	Remark
<b>TRANSISTOR</b>			
Q001	8-729-100-66	TRANSISTOR 2SC1623	
Q002	8-729-100-66	TRANSISTOR 2SC1623	
Q003	8-729-100-66	TRANSISTOR 2SC1623	
Q004	8-729-100-66	TRANSISTOR 2SC1623	
Q005	8-729-216-22	TRANSISTOR 2SA1162	
Q006	8-729-218-43	TRANSISTOR 2SK184-GR	
Q007	8-729-100-66	TRANSISTOR 2SC1623	
Q008	8-729-216-22	TRANSISTOR 2SA1162	
Q009	8-729-100-66	TRANSISTOR 2SC1623	
Q010	8-729-100-66	TRANSISTOR 2SC1623	
Q011	8-729-216-22	TRANSISTOR 2SA1162	
Q012	8-729-100-66	TRANSISTOR 2SC1623	
Q013	8-729-216-22	TRANSISTOR 2SA1162	
Q014	8-729-100-66	TRANSISTOR 2SC1623	
Q015	8-729-100-66	TRANSISTOR 2SC1623	
Q016	8-729-100-66	TRANSISTOR 2SC1623	
Q017	8-729-658-32	TRANSISTOR 2SC1583-G	
Q018	8-729-658-32	TRANSISTOR 2SC1583-G	
Q019	8-729-100-66	TRANSISTOR 2SC1623	
Q020	8-729-100-66	TRANSISTOR 2SC1623	
Q021	8-729-100-66	TRANSISTOR 2SC1623	
Q022	8-729-100-66	TRANSISTOR 2SC1623	
Q023	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q024	8-729-216-22	TRANSISTOR 2SA1162	
Q025	8-729-100-66	TRANSISTOR 2SC1623	
Q101	8-729-100-66	TRANSISTOR 2SC1623	
Q102	8-729-100-66	TRANSISTOR 2SC1623	
Q103	8-729-100-66	TRANSISTOR 2SC1623	
Q104	8-729-216-22	TRANSISTOR 2SA1162	
Q105	8-729-901-00	TRANSISTOR DTC124EK	
Q121	8-729-100-66	TRANSISTOR 2SC1623	
Q122	8-729-100-66	TRANSISTOR 2SC1623	
Q201	8-729-900-53	TRANSISTOR DTC114EK	
Q202	8-729-901-01	TRANSISTOR DTC144EK	
Q203	8-729-900-53	TRANSISTOR DTC114EK	
Q204	8-729-901-05	TRANSISTOR DTA124EK	
Q205	8-729-901-00	TRANSISTOR DTC124EK	
Q206	8-729-901-01	TRANSISTOR DTC144EK	
Q303	8-729-901-04	TRANSISTOR DTA114EK	
Q304	8-729-218-43	TRANSISTOR 2SK184-GR	
Q305	8-729-901-04	TRANSISTOR DTA114EK	
Q306	8-729-900-53	TRANSISTOR DTC114EK	
Q307	8-729-218-43	TRANSISTOR 2SK184-GR	
Q308	8-729-218-43	TRANSISTOR 2SK184-GR	
Q310	8-729-100-66	TRANSISTOR 2SC1623	
Q311	8-729-100-66	TRANSISTOR 2SC1623	
Q312	8-729-320-62	TRANSISTOR 2SD789-34	
Q313	8-729-320-62	TRANSISTOR 2SD789-34	
Q314	8-729-901-05	TRANSISTOR DTA124EK	
Q401	8-729-901-00	TRANSISTOR DTC124EK	
Q402	8-729-901-00	TRANSISTOR DTC124EK	
Q403	8-729-901-05	TRANSISTOR DTA124EK	
Q404	8-729-901-00	TRANSISTOR DTC124EK	
Q405	8-729-901-05	TRANSISTOR DTA124EK	
Q410	8-729-281-53	TRANSISTOR 2SC1815-GR	
Q411	8-729-201-53	TRANSISTOR 2SA1015-GR	
Q412	8-729-281-53	TRANSISTOR 2SC1815-GR	
Q413	8-729-281-53	TRANSISTOR 2SC1815-GR	
Q414	8-729-201-53	TRANSISTOR 2SA1015-GR	
Q415	8-729-281-53	TRANSISTOR 2SC1815-GR	
Q416	8-729-281-53	TRANSISTOR 2SC1815-GR	
Q417	8-729-201-53	TRANSISTOR 2SA1015-GR	
Q418	8-729-281-53	TRANSISTOR 2SC1815-GR	
Q420	8-729-901-05	TRANSISTOR DTA124EK	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
Q421	8-729-901-05	TRANSISTOR DTA124EK		R055	1-216-035-00	METAL GLAZE 270	5% 1/10W
Q422	8-729-901-00	TRANSISTOR DTC124EK		R056	1-216-063-00	METAL GLAZE 3.9K	5% 1/10W
Q423	8-729-901-05	TRANSISTOR DTA124EK		R057	1-216-049-00	METAL GLAZE 1K	5% 1/10W
Q424	8-729-100-66	TRANSISTOR 2SC1623		R058	1-216-043-00	METAL GLAZE 560	5% 1/10W
Q432	8-729-119-78	TRANSISTOR 2SC2785-HFE		R059	1-216-031-00	METAL GLAZE 180	5% 1/10W
Q451	8-729-119-76	TRANSISTOR 2SA1175-HFE		R060	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W
Q452	8-729-119-76	TRANSISTOR 2SA1175-HFE		R061	1-216-033-00	METAL GLAZE 220	5% 1/10W
Q453	8-729-119-78	TRANSISTOR 2SC2785-HFE		R062	1-216-033-00	METAL GLAZE 220	5% 1/10W
Q458	8-729-804-68	TRANSISTOR 2SB1133-S		R063	1-216-033-00	METAL GLAZE 220	5% 1/10W
Q459	8-729-804-17	TRANSISTOR 2SD1666-R		R064	1-216-047-00	METAL GLAZE 820	5% 1/10W
<b>RESISTOR</b>				R065	1-216-081-00	METAL GLAZE 22K	5% 1/10W
R001	1-216-041-00	METAL GLAZE 470	5% 1/10W	R066	1-216-033-00	METAL GLAZE 220	5% 1/10W
R002	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W	R067	1-216-059-00	METAL GLAZE 2.7K	5% 1/10W
R003	1-216-067-00	METAL GLAZE 5.6K	5% 1/10W	R068	1-216-085-00	METAL GLAZE 33K	5% 1/10W
R004	1-216-053-00	METAL GLAZE 1.5K	5% 1/10W	R069	1-216-063-00	METAL GLAZE 3.9K	5% 1/10W
R005	1-216-047-00	METAL GLAZE 820	5% 1/10W	R070	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R006	1-216-033-00	METAL GLAZE 220	5% 1/10W	R071	1-216-041-00	METAL GLAZE 470	5% 1/10W
R007	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W	R072	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W
R008	1-216-049-00	METAL GLAZE 1K	5% 1/10W	R073	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R009	1-216-027-00	METAL GLAZE 120	5% 1/10W	R074	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R010	1-216-025-00	METAL GLAZE 100	5% 1/10W	R075	1-216-039-00	METAL GLAZE 390	5% 1/10W
R011	1-216-025-00	METAL GLAZE 100	5% 1/10W	R076	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R012	1-216-073-00	METAL GLAZE 10K	5% 1/10W	R077	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R013	1-216-073-00	METAL GLAZE 10K	5% 1/10W	R078	1-216-061-00	METAL GLAZE 3.3K	5% 1/10W
R014	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W	R079	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R015	1-216-121-00	METAL GLAZE 1M	5% 1/10W	R080	1-216-067-00	METAL GLAZE 5.6K	5% 1/10W
R016	1-216-037-00	METAL GLAZE 330	5% 1/10W	R081	1-216-115-00	METAL GLAZE 560K	5% 1/10W
R017	1-216-113-00	METAL GLAZE 470K	5% 1/10W	R082	1-216-115-00	METAL GLAZE 560K	5% 1/10W
R018	1-216-085-00	METAL GLAZE 33K	5% 1/10W	R083	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W
R019	1-216-085-00	METAL GLAZE 33K	5% 1/10W	R084	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W
R020	1-216-081-00	METAL GLAZE 22K	5% 1/10W	R085	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W
R021	1-216-081-00	METAL GLAZE 22K	5% 1/10W	R086	1-216-656-11	METAL CHIP 1.6K	0.50% 1/10W
R022	1-216-073-00	METAL GLAZE 10K	5% 1/10W	R087	1-216-661-11	METAL CHIP 2.7K	0.50% 1/10W
R023	1-216-081-00	METAL GLAZE 22K	5% 1/10W	R088	1-216-115-00	METAL GLAZE 560K	5% 1/10W
R024	1-216-109-00	METAL GLAZE 330K	5% 1/10W	R089	1-216-115-00	METAL GLAZE 560K	5% 1/10W
R025	1-216-051-00	METAL GLAZE 1.2K	5% 1/10W	R090	1-216-071-00	METAL GLAZE 8.2K	5% 1/10W
R026	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W	R091	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R027	1-216-049-00	METAL GLAZE 1K	5% 1/10W	R092	1-216-041-00	METAL GLAZE 470	5% 1/10W
R028	1-216-035-00	METAL GLAZE 270	5% 1/10W	R093	1-216-089-00	METAL GLAZE 47K	5% 1/10W
R029	1-216-049-00	METAL GLAZE 1K	5% 1/10W	R094	1-216-037-00	METAL GLAZE 330	5% 1/10W
R030	1-216-095-00	METAL GLAZE 82K	5% 1/10W	R095	1-216-624-11	METAL CHIP 75	0.50% 1/10W
R031	1-216-081-00	METAL GLAZE 22K	5% 1/10W	R096	1-216-033-00	METAL GLAZE 220	5% 1/10W
R032	1-216-045-00	METAL GLAZE 680	5% 1/10W	R097	1-216-041-00	METAL GLAZE 470	5% 1/10W
R033	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W	R101	1-216-121-00	METAL GLAZE 1M	5% 1/10W
R034	1-216-045-00	METAL GLAZE 680	5% 1/10W	R102	1-216-053-00	METAL GLAZE 1.5K	5% 1/10W
R035	1-216-029-00	METAL GLAZE 150	5% 1/10W	R103	1-216-053-00	METAL GLAZE 1.5K	5% 1/10W
R036	1-216-073-00	METAL GLAZE 10K	5% 1/10W	R104	1-216-053-00	METAL GLAZE 1.5K	5% 1/10W
R037	1-216-073-00	METAL GLAZE 10K	5% 1/10W	R105	1-216-091-00	METAL GLAZE 56K	5% 1/10W
R038	1-216-073-00	METAL GLAZE 10K	5% 1/10W	R106	1-216-105-00	METAL GLAZE 220K	5% 1/10W
R039	1-216-085-00	METAL GLAZE 33K	5% 1/10W	R107	1-216-041-00	METAL GLAZE 470	5% 1/10W
R040	1-216-073-00	METAL GLAZE 10K	5% 1/10W	R108	1-216-031-00	METAL GLAZE 180	5% 1/10W
R041	1-216-041-00	METAL GLAZE 470	5% 1/10W	R109	1-216-041-00	METAL GLAZE 470	5% 1/10W
R042	1-216-041-00	METAL GLAZE 470	5% 1/10W	R110	1-216-033-00	METAL GLAZE 220	5% 1/10W
R043	1-216-085-00	METAL GLAZE 33K	5% 1/10W	R111	1-216-051-00	METAL GLAZE 1.2K	5% 1/10W
R044	1-216-049-00	METAL GLAZE 1K	5% 1/10W	R112	1-216-031-00	METAL GLAZE 180	5% 1/10W
R045	1-216-035-00	METAL GLAZE 270	5% 1/10W	R113	1-216-037-00	METAL GLAZE 330	5% 1/10W
R046	1-216-039-00	METAL GLAZE 390	5% 1/10W	R114	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R047	1-216-099-00	METAL GLAZE 120K	5% 1/10W	R115	1-216-075-00	METAL GLAZE 12K	5% 1/10W
R048	1-216-089-00	METAL GLAZE 47K	5% 1/10W	R116	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R049	1-216-077-00	METAL GLAZE 15K	5% 1/10W	R117	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R050	1-216-045-00	METAL GLAZE 680	5% 1/10W	R118	1-216-075-00	METAL GLAZE 12K	5% 1/10W
R051	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W	R119	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R052	1-216-041-00	METAL GLAZE 470	5% 1/10W	R121	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R053	1-216-091-00	METAL GLAZE 56K	5% 1/10W	R122	1-216-025-00	METAL GLAZE 100	5% 1/10W
R054	1-216-049-00	METAL GLAZE 1K	5% 1/10W	R123	1-216-061-00	METAL GLAZE 3.3K	5% 1/10W

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
R124	1-216-097-00	METAL GLAZE 100K	5% 1/10W
R125	1-216-067-00	METAL GLAZE 5.6K	5% 1/10W
R126	1-216-075-00	METAL GLAZE 12K	5% 1/10W
R127	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W
R128	1-216-067-00	METAL GLAZE 5.6K	5% 1/10W
R129	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R201	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W
R202	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W
R203	1-216-113-00	METAL GLAZE 470K	5% 1/10W
R205	1-216-093-00	METAL GLAZE 68K	5% 1/10W
R206	1-216-111-00	METAL GLAZE 390K	5% 1/10W
R207	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R208	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R210	1-216-025-00	METAL GLAZE 100	5% 1/10W
R211	1-216-081-00	METAL GLAZE 22K	5% 1/10W
R220	1-216-085-00	METAL GLAZE 33K	5% 1/10W
R221	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R222	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R223	1-216-085-00	METAL GLAZE 33K	5% 1/10W
R224	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R226	1-216-692-11	METAL CHIP 51K	0.50% 1/10W
R227	1-216-077-00	METAL GLAZE 15K	5% 1/10W
R228	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W
R229	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W
R230	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W
R231	1-216-109-00	METAL GLAZE 330K	5% 1/10W
R232	1-216-071-00	METAL GLAZE 8.2K	5% 1/10W
R233	1-216-089-00	METAL GLAZE 47K	5% 1/10W
R234	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R235	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W
R236	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R237	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R238	1-216-081-00	METAL GLAZE 22K	5% 1/10W
R239	1-216-081-00	METAL GLAZE 22K	5% 1/10W
R240	1-216-029-00	METAL GLAZE 150	5% 1/10W
R241	1-216-029-00	METAL GLAZE 150	5% 1/10W
R243	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R245	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R246	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W
R247	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W
R250	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R251	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R252	1-216-081-00	METAL GLAZE 22K	5% 1/10W
R300	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W
R301	1-216-089-00	METAL GLAZE 47K	5% 1/10W
R302	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W
R303	1-216-748-11	METAL GLAZE 39K	5% 1/10W
R304	1-216-077-00	METAL GLAZE 15K	5% 1/10W
R305	1-216-077-00	METAL GLAZE 15K	5% 1/10W
R306	1-216-077-00	METAL GLAZE 15K	5% 1/10W
R307	1-216-083-00	METAL GLAZE 27K	5% 1/10W
R308	1-216-053-00	METAL GLAZE 1.5K	5% 1/10W
R309	1-216-083-00	METAL GLAZE 27K	5% 1/10W
R310	1-216-025-00	METAL GLAZE 100	5% 1/10W
R311	1-216-308-00	METAL GLAZE 4.7	5% 1/10W
R312	1-216-748-11	METAL GLAZE 39K	5% 1/10W
R313	1-216-063-00	METAL GLAZE 3.9K	5% 1/10W
R314	1-216-748-11	METAL GLAZE 39K	5% 1/10W
R315	1-216-097-00	METAL GLAZE 100K	5% 1/10W
R316	1-216-097-00	METAL GLAZE 100K	5% 1/10W
R317	1-216-083-00	METAL GLAZE 27K	5% 1/10W
R318	1-216-069-00	METAL GLAZE 6.8K	5% 1/10W
R319	1-216-097-00	METAL GLAZE 100K	5% 1/10W
R320	1-216-069-00	METAL GLAZE 6.8K	5% 1/10W
R321	1-216-085-00	METAL GLAZE 33K	5% 1/10W

Ref.No	Part No.	Description	Remark
R322	1-216-017-00	METAL GLAZE 47	5% 1/10W
R323	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W
R324	1-216-051-00	METAL GLAZE 1.2K	5% 1/10W
R325	1-216-055-00	METAL GLAZE 1.8K	5% 1/10W
R326	1-216-069-00	METAL GLAZE 6.8K	5% 1/10W
R327	1-216-055-00	METAL GLAZE 1.8K	5% 1/10W
R328	1-216-055-00	METAL GLAZE 1.8K	5% 1/10W
R329	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W
R330	1-216-045-00	METAL GLAZE 680	5% 1/10W
R331	1-216-308-00	METAL GLAZE 4.7	5% 1/10W
R332	1-244-832-11	CARBON 20	5% 1/2W
R333	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R334	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R335	1-216-029-00	METAL GLAZE 150	5% 1/10W
R336	1-216-374-00	METAL OXIDE 2.7	5% 2W F
R337	1-216-121-00	METAL GLAZE 1M	5% 1/10W
R338	1-216-071-00	METAL GLAZE 8.2K	5% 1/10W
R339	1-216-079-00	METAL GLAZE 18K	5% 1/10W
R340	1-216-063-00	METAL GLAZE 3.9K	5% 1/10W
R341	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W
R342	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R343	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R344	1-216-687-11	METAL CHIP 33K	0.50% 1/10W
R345	1-216-681-11	METAL CHIP 18K	0.50% 1/10W
R346	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R347	1-216-119-00	METAL GLAZE 820K	5% 1/10W
R348	1-216-687-11	METAL CHIP 33K	0.50% 1/10W
R349	1-216-682-11	METAL CHIP 20K	0.50% 1/10W
R350	1-216-119-00	METAL GLAZE 820K	5% 1/10W
R351	1-216-089-00	METAL GLAZE 47K	5% 1/10W
R352	1-216-105-00	METAL GLAZE 220K	5% 1/10W
R353	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W
R355	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R357	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R358	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W
R359	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W
R360	1-216-071-00	METAL GLAZE 8.2K	5% 1/10W
R361	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W
R362	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W
R363	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W
R364	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R365	1-216-071-00	METAL GLAZE 8.2K	5% 1/10W
R366	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W
R367	1-216-077-00	METAL GLAZE 15K	5% 1/10W
R368	1-216-077-00	METAL GLAZE 15K	5% 1/10W
R369	1-216-077-00	METAL GLAZE 15K	5% 1/10W
R370	1-216-077-00	METAL GLAZE 15K	5% 1/10W
R371	1-216-097-00	METAL GLAZE 100K	5% 1/10W
R372	1-216-097-00	METAL GLAZE 100K	5% 1/10W
R373	1-216-107-00	METAL GLAZE 270K	5% 1/10W
R374	1-216-115-00	METAL GLAZE 560K	5% 1/10W
R375	1-216-083-00	METAL GLAZE 27K	5% 1/10W
R376	1-216-083-00	METAL GLAZE 27K	5% 1/10W
R377	1-216-093-00	METAL GLAZE 68K	5% 1/10W
R378	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R379	1-216-025-00	METAL GLAZE 100	5% 1/10W
R380	1-216-748-11	METAL GLAZE 39K	5% 1/10W
R381	1-216-095-00	METAL GLAZE 82K	5% 1/10W
R382	1-216-093-00	METAL GLAZE 68K	5% 1/10W
R383	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R384	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R386	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R387	1-216-079-00	METAL GLAZE 18K	5% 1/10W
R388	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R389	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
R390	1-216-089-00	METAL GLAZE 47K	5% 1/10W
R392	1-216-037-00	METAL GLAZE 330	5% 1/10W
R393	1-216-091-00	METAL GLAZE 56K	5% 1/10W
R394	1-216-017-00	METAL GLAZE 47	5% 1/10W
R395	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R396	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R397	1-216-374-00	METAL OXIDE 2.7	5% 2W F
R398	1-216-081-00	METAL GLAZE 22K	5% 1/10W
R399	1-216-025-00	METAL GLAZE 100	5% 1/10W
R400	1-249-410-11	CARBON 270	5% 1/4W
R401	1-216-085-00	METAL GLAZE 33K	5% 1/10W
R402	1-216-085-00	METAL GLAZE 33K	5% 1/10W
R403	1-216-097-00	METAL GLAZE 100K	5% 1/10W
R404	1-216-077-00	METAL GLAZE 15K	5% 1/10W
R405	1-216-105-00	METAL GLAZE 220K	5% 1/10W
R406	1-216-091-00	METAL GLAZE 56K	5% 1/10W
R407	1-216-081-00	METAL GLAZE 22K	5% 1/10W
R408	1-216-111-00	METAL GLAZE 390K	5% 1/10W
R409	1-216-077-00	METAL GLAZE 15K	5% 1/10W
R410	1-216-077-00	METAL GLAZE 15K	5% 1/10W
R411	1-216-041-00	METAL GLAZE 470	5% 1/10W
R412	1-216-105-00	METAL GLAZE 220K	5% 1/10W
R413	1-216-081-00	METAL GLAZE 22K	5% 1/10W
R414	1-216-105-00	METAL GLAZE 220K	5% 1/10W
R415	1-216-099-00	METAL GLAZE 120K	5% 1/10W
R416	1-216-105-00	METAL GLAZE 220K	5% 1/10W
R417	1-216-105-00	METAL GLAZE 220K	5% 1/10W
R418	1-216-111-00	METAL GLAZE 390K	5% 1/10W
R419	1-216-089-00	METAL GLAZE 47K	5% 1/10W
R420	1-216-105-00	METAL GLAZE 220K	5% 1/10W
R423	1-216-075-00	METAL GLAZE 12K	5% 1/10W
R424	1-216-075-00	METAL GLAZE 12K	5% 1/10W
R425	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R426	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R427	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W
R428	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W
R429	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R430	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W
R431	1-249-421-11	CARBON 2.2K	5% 1/4W
R432	1-249-421-11	CARBON 2.2K	5% 1/4W
R433	1-249-418-11	CARBON 1.2K	5% 1/4W
R434	1-249-421-11	CARBON 2.2K	5% 1/4W
R435	1-249-421-11	CARBON 2.2K	5% 1/4W
R436	1-249-418-11	CARBON 1.2K	5% 1/4W
R437	1-249-421-11	CARBON 2.2K	5% 1/4W
R438	1-249-421-11	CARBON 2.2K	5% 1/4W
R439	1-249-418-11	CARBON 1.2K	5% 1/4W
R440	1-249-421-11	CARBON 2.2K	5% 1/4W
R441	1-249-421-11	CARBON 2.2K	5% 1/4W
R442	1-249-418-11	CARBON 1.2K	5% 1/4W
R443	1-249-421-11	CARBON 2.2K	5% 1/4W
R444	1-249-421-11	CARBON 2.2K	5% 1/4W
R445	1-249-418-11	CARBON 1.2K	5% 1/4W
R446	1-249-421-11	CARBON 2.2K	5% 1/4W
R447	1-249-421-11	CARBON 2.2K	5% 1/4W
R448	1-249-418-11	CARBON 1.2K	5% 1/4W
R451	1-216-075-00	METAL GLAZE 12K	5% 1/10W
R452	1-216-093-00	METAL GLAZE 68K	5% 1/10W
R453	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R454	1-216-097-00	METAL GLAZE 100K	5% 1/10W
R455	1-216-097-00	METAL GLAZE 100K	5% 1/10W
R456	1-216-081-00	METAL GLAZE 22K	5% 1/10W
R457	1-207-620-00	METAL OXIDE 1	5% 3W F
R458	1-216-025-00	METAL GLAZE 100	5% 1/10W
R459	1-216-025-00	METAL GLAZE 100	5% 1/10W

Ref.No	Part No.	Description	Remark
R461	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W
R462	1-216-691-11	METAL CHIP 47K	0.50% 1/10W
R463	1-216-677-11	METAL CHIP 12K	0.50% 1/10W
R464	1-216-691-11	METAL CHIP 47K	0.50% 1/10W
R465	1-216-677-11	METAL CHIP 12K	0.50% 1/10W
R466	1-216-075-00	METAL GLAZE 12K	5% 1/10W
R467	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R468	1-216-081-00	METAL GLAZE 22K	5% 1/10W
R469	1-216-081-00	METAL GLAZE 22K	5% 1/10W
R470	1-216-061-00	METAL GLAZE 3.3K	5% 1/10W
R471	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R472	1-216-061-00	METAL GLAZE 3.3K	5% 1/10W
R473	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R474	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R476	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W
R477	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W
R481	1-249-433-11	CARBON 22K	5% 1/4W
R482	1-249-429-11	CARBON 10K	5% 1/4W
R484	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R485	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R486	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R496	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R497	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R498	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R499	1-216-079-00	METAL GLAZE 18K	5% 1/10W
R501	1-216-097-00	METAL GLAZE 100K	5% 1/10W
R502	1-216-097-00	METAL GLAZE 100K	5% 1/10W
R503	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R504	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R505	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R506	1-216-093-00	METAL GLAZE 68K	5% 1/10W
R507	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R508	1-216-103-00	METAL GLAZE 180K	5% 1/10W
R509	1-216-095-00	METAL GLAZE 82K	5% 1/10W
R510	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R511	1-216-017-00	METAL GLAZE 47	5% 1/10W
R512	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R513	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R514	1-216-097-00	METAL GLAZE 100K	5% 1/10W
R515	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R516	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R517	1-216-051-00	METAL GLAZE 1.2K	5% 1/10W
R519	1-216-051-00	METAL GLAZE 1.2K	5% 1/10W
R520	1-216-025-00	METAL GLAZE 100	5% 1/10W
R521	1-216-001-00	METAL GLAZE 10	5% 1/10W
R522	1-216-051-00	METAL GLAZE 1.2K	5% 1/10W
R523	1-216-101-00	METAL GLAZE 150K	5% 1/10W
R524	1-216-017-00	METAL GLAZE 47	5% 1/10W
R525	1-216-295-00	METAL GLAZE 0	5% 1/10W
R528	1-216-081-00	METAL GLAZE 22K	5% 1/10W
R530	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R531	1-216-748-11	METAL GLAZE 39K	5% 1/10W
R532	1-216-091-00	METAL GLAZE 56K	5% 1/10W
R533	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W
R534	1-216-035-00	METAL GLAZE 270	5% 1/10W
R535	1-216-085-00	METAL GLAZE 33K	5% 1/10W
R536	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R537	1-216-041-00	METAL GLAZE 470	5% 1/10W
R539	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W
R540	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W
R550	1-216-083-00	METAL GLAZE 27K	5% 1/10W
R551	1-216-081-00	METAL GLAZE 22K	5% 1/10W
R591	1-216-081-00	METAL GLAZE 22K	5% 1/10W
R701	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R902	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W

When indicating parts by reference number, please include the board name.

No.	Part No.	Description	Remark		No.	Part No.	Description	Remark
<u>DIODE</u>					R221	1-216-063-00	METAL GLAZE 3.9K 5%	1/10W
D201	8-719-911-19	DIODE 1SS119		R222	1-216-075-00	METAL GLAZE 12K 5%	1/10W	
D202	8-719-911-19	DIODE 1SS119		R223	1-216-049-00	METAL GLAZE 1K 5%	1/10W	
<u>FILTER</u>					R224	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
FL201	1-235-925-11	FILTER, BAND PASS (2.3MHZ)		R225	1-216-051-00	METAL GLAZE 1.2K 5%	1/10W	
FL202	1-235-926-11	FILTER, BAND PASS (2.8MHZ)		R226	1-216-051-00	METAL GLAZE 1.2K 5%	1/10W	
<u>IC</u>					R227	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
IC201	8-759-321-46	IC HA12127NT		R228	1-216-097-00	METAL GLAZE 100K 5%	1/10W	
IC202	8-759-945-58	IC RC4558P		R229	1-216-049-00	METAL GLAZE 1K 5%	1/10W	
<u>JUMPER RESISTOR</u>					R230	1-216-073-00	METAL GLAZE 10K 5%	1/10W
JR201	1-216-296-00	METAL GLAZE 0 5%	1/8W	R231	1-216-073-00	METAL GLAZE 10K 5%	1/10W	
JR202	1-216-296-00	METAL GLAZE 0 5%	1/8W	R232	1-216-748-11	METAL GLAZE 39K 5%	1/10W	
JR203	1-216-296-00	METAL GLAZE 0 5%	1/8W	R233	1-216-069-00	METAL GLAZE 6.8K 5%	1/10W	
JR204	1-216-296-00	METAL GLAZE 0 5%	1/8W	R234	1-216-101-00	METAL GLAZE 150K 5%	1/10W	
JR205	1-216-296-00	METAL GLAZE 0 5%	1/8W	R235	1-216-101-00	METAL GLAZE 150K 5%	1/10W	
JR206	1-216-295-00	METAL GLAZE 0 5%	1/10W	R236	1-216-096-00	METAL GLAZE 91K 5%	1/10W	
JR207	1-216-295-00	METAL GLAZE 0 5%	1/10W	R237	1-216-089-00	METAL GLAZE 47K 5%	1/10W	
<u>COIL</u>					R238	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
L201	1-408-425-00	INDUCTOR 220UH		R239	1-216-049-00	METAL GLAZE 1K 5%	1/10W	
L202	1-408-417-00	INDUCTOR 47UH		R240	1-216-049-00	METAL GLAZE 1K 5%	1/10W	
L203	1-408-417-00	INDUCTOR 47UH		R241	1-216-060-00	METAL GLAZE 3K 5%	1/10W	
L204	1-408-421-00	INDUCTOR 100UH		R242	1-216-075-00	METAL GLAZE 12K 5%	1/10W	
L205	1-408-409-00	INDUCTOR 10UH		R243	1-216-090-00	METAL GLAZE 51K 5%	1/10W	
L206	1-408-409-00	INDUCTOR 10UH		R244	1-216-090-00	METAL GLAZE 51K 5%	1/10W	
L207	1-410-069-11	INDUCTOR 6.8MMH		R245	1-216-064-00	METAL GLAZE 4.3K 5%	1/10W	
L208	1-410-069-11	INDUCTOR 6.8MMH		R246	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W	
<u>TRANSISTOR</u>					R247	1-216-051-00	METAL GLAZE 1.2K 5%	1/10W
Q201	8-729-100-66	TRANSISTOR 2SC1623		R248	1-216-051-00	METAL GLAZE 1.2K 5%	1/10W	
Q202	8-729-100-66	TRANSISTOR 2SC1623		R249	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W	
Q203	8-729-100-66	TRANSISTOR 2SC1623		R250	1-216-097-00	METAL GLAZE 100K 5%	1/10W	
Q204	8-729-100-66	TRANSISTOR 2SC1623		R251	1-216-073-00	METAL GLAZE 10K 5%	1/10W	
Q205	8-729-100-66	TRANSISTOR 2SC1623		R252	1-216-748-11	METAL GLAZE 39K 5%	1/10W	
Q206	8-729-100-66	TRANSISTOR 2SC1623		R253	1-216-069-00	METAL GLAZE 6.8K 5%	1/10W	
Q208	8-729-218-43	TRANSISTOR 2SK184-GR		R254	1-216-063-00	METAL GLAZE 3.9K 5%	1/10W	
Q210	8-729-218-43	TRANSISTOR 2SK184-GR		R255	1-216-075-00	METAL GLAZE 12K 5%	1/10W	
Q211	8-729-100-66	TRANSISTOR 2SC1623		R257	1-216-089-00	METAL GLAZE 47K 5%	1/10W	
Q212	8-729-901-05	TRANSISTOR DTA124EK		R258	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W	
<u>RESISTOR</u>					R259	1-216-121-00	METAL GLAZE 1M 5%	1/10W
R201	1-216-073-00	METAL GLAZE 10K 5%	1/10W	R260	1-216-059-00	METAL GLAZE 2.7K 5%	1/10W	
R202	1-216-053-00	METAL GLAZE 1.5K 5%	1/10W	R261	1-216-107-00	METAL GLAZE 270K 5%	1/10W	
R203	1-216-048-00	METAL GLAZE 910 5%	1/10W	R262	1-216-129-00	METAL GLAZE 2.2M 5%	1/10W	
R204	1-216-053-00	METAL GLAZE 1.5K 5%	1/10W	R263	1-216-121-00	METAL GLAZE 1M 5%	1/10W	
R205	1-216-033-00	METAL GLAZE 220 5%	1/10W	R266	1-216-049-00	METAL GLAZE 1K 5%	1/10W	
R206	1-216-081-00	METAL GLAZE 22K 5%	1/10W	R267	1-216-107-00	METAL GLAZE 270K 5%	1/10W	
R207	1-216-081-00	METAL GLAZE 22K 5%	1/10W	R268	1-216-129-00	METAL GLAZE 2.2M 5%	1/10W	
R208	1-216-049-00	METAL GLAZE 1K 5%	1/10W	R269	1-216-121-00	METAL GLAZE 1M 5%	1/10W	
R209	1-216-049-00	METAL GLAZE 1K 5%	1/10W	R272	1-216-049-00	METAL GLAZE 1K 5%	1/10W	
R210	1-216-049-00	METAL GLAZE 1K 5%	1/10W	R273	1-216-059-00	METAL GLAZE 2.7K 5%	1/10W	
R211	1-216-067-00	METAL GLAZE 5.6K 5%	1/10W	R274	1-216-037-00	METAL GLAZE 330 5%	1/10W	
R212	1-216-049-00	METAL GLAZE 1K 5%	1/10W	R275	1-216-117-00	METAL GLAZE 680K 5%	1/10W	
R213	1-216-049-00	METAL GLAZE 1K 5%	1/10W	R276	1-216-109-00	METAL GLAZE 330K 5%	1/10W	
R214	1-216-049-00	METAL GLAZE 1K 5%	1/10W	R277	1-216-053-00	METAL GLAZE 1.5K 5%	1/10W	
R215	1-216-067-00	METAL GLAZE 5.6K 5%	1/10W	R278	1-216-039-00	METAL GLAZE 390 5%	1/10W	
R216	1-216-075-00	METAL GLAZE 12K 5%	1/10W	R279	1-216-081-00	METAL GLAZE 22K 5%	1/10W	
R217	1-216-049-00	METAL GLAZE 1K 5%	1/10W	R280	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W	
R218	1-216-059-00	METAL GLAZE 2.7K 5%	1/10W	R281	1-216-077-00	METAL GLAZE 15K 5%	1/10W	
R219	1-216-049-00	METAL GLAZE 1K 5%	1/10W	R282	1-216-085-00	METAL GLAZE 33K 5%	1/10W	
R220	1-216-060-00	METAL GLAZE 3K 5%	1/10W	R283	1-216-077-00	METAL GLAZE 15K 5%	1/10W	
				R284	1-216-041-00	METAL GLAZE 470 5%	1/10W	
<u>VARIABLE RESISTOR</u>					RV201	1-228-995-00	RES. ADJ. CARBON 22K	
				RV202	1-228-995-00	RES. ADJ. CARBON 22K		

When indicating parts by reference number, please include the board name.



Ref.No Part No. Description Remark  
 \*A-6726-427-A CB-31 BOARD, COMPLETE (Ref. No. 2000 Series)  
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CAPACITOR

C001	1-130-493-00	MYLAR	0.068MF	5%	50V
C002	1-130-488-00	MYLAR	0.027MF	5%	50V
C003	1-130-488-00	MYLAR	0.027MF	5%	50V
C004	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C005	1-124-477-11	ELECT	47MF	20%	16V
C006	1-124-477-11	ELECT	47MF	20%	16V
C007	1-126-320-11	ELECT	10MF	20%	16V
C008	1-126-151-11	ELECT	4.7MF	20%	16V
C009	1-126-151-11	ELECT	4.7MF	20%	16V

CONNECTOR

CN001	1-506-483-21	PIN, CONNECTOR 4P
CN003	1-506-473-11	PIN, CONNECTOR 8P
CN004	1-506-470-11	PIN, CONNECTOR 5P
CN005	1-506-482-11	PIN, CONNECTOR 3P

DIODE

D001	8-719-400-18	DIODE MA152WK
D002	8-719-400-18	DIODE MA152WK
D003	8-719-400-18	DIODE MA152WK
D004	8-719-800-76	DIODE ISS226
D005	8-719-800-76	DIODE ISS226
D006	8-719-800-76	DIODE ISS226

IC

IC001	8-759-700-43	IC RC4558M
IC002	8-759-700-43	IC RC4558M
IC003	8-759-981-65	IC LM2903M
IC004	8-759-700-43	IC RC4558M
IC005	8-759-700-43	IC RC4558M

JUMPER RESISTOR

JR001	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR002	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR003	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR004	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR005	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR006	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR007	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR008	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR009	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR010	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR011	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR012	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR015	1-216-295-00	METAL GLAZE	0	5%	1/10W

TRANSISTOR

Q001	8-729-901-00	TRANSISTOR DTC124EK
Q002	8-729-901-04	TRANSISTOR DTA114EK
Q003	8-729-901-04	TRANSISTOR DTA114EK
Q004	8-729-100-66	TRANSISTOR 2SC1623
Q005	8-729-216-22	TRANSISTOR 2SA1162
Q006	8-729-218-43	TRANSISTOR 2SK184-GR
Q007	8-729-100-66	TRANSISTOR 2SC1623
Q008	8-729-100-66	TRANSISTOR 2SC1623
Q009	8-729-216-22	TRANSISTOR 2SA1162
Q010	8-729-216-22	TRANSISTOR 2SA1162

RESISTOR

R001	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R002	1-216-073-00	METAL GLAZE	10K	5%	1/10W

Ref.No	Part No.	Description	Remark
R003	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R004	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R005	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R006	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R007	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R008	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R009	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R010	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R011	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R012	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R013	1-216-079-00	METAL GLAZE	18K 5% 1/10W
R014	1-216-077-00	METAL GLAZE	15K 5% 1/10W
R015	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R016	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R017	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R018	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R019	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R020	1-216-105-00	METAL GLAZE	220K 5% 1/10W
R021	1-216-105-00	METAL GLAZE	220K 5% 1/10W
R022	1-216-105-00	METAL GLAZE	220K 5% 1/10W
R023	1-216-051-00	METAL GLAZE	1.2K 5% 1/10W
R024	1-216-069-00	METAL GLAZE	6.8K 5% 1/10W
R025	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R026	1-216-051-00	METAL GLAZE	1.2K 5% 1/10W
R027	1-216-079-00	METAL GLAZE	18K 5% 1/10W
R028	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R029	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R030	1-216-047-00	METAL GLAZE	820 5% 1/10W
R031	1-216-109-00	METAL GLAZE	330K 5% 1/10W
R032	1-216-109-00	METAL GLAZE	330K 5% 1/10W
R033	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R034	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R035	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R036	1-216-025-00	METAL GLAZE	100 5% 1/10W
R037	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R038	1-216-109-00	METAL GLAZE	330K 5% 1/10W
R039	1-216-109-00	METAL GLAZE	330K 5% 1/10W
R040	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R041	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R042	1-216-047-00	METAL GLAZE	820 5% 1/10W
R043	1-216-025-00	METAL GLAZE	100 5% 1/10W
R044	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R045	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R046	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R048	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R049	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R051	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R052	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R053	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R054	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R055	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R056	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R057	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R058	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R059	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R070	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R071	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R072	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R073	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R074	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R075	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R076	1-216-069-00	METAL GLAZE	6.8K 5% 1/10W

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When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark		
* A-6421-425-A VP-21 BOARD, COMPLETE (Ref. No. 4000 Series)					
*****					
<u>BAND PASS FILTER</u>					
BPF001	1-235-943-11	BPF			
<u>CAPACITOR</u>					
C005	1-124-477-11	ELECT	47MF	20%	16V
C006	1-124-477-11	ELECT	47MF	20%	16V
C011	1-124-477-11	ELECT	47MF	20%	16V
C012	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C013	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C014	1-130-487-00	MYLAR	0.022MF	5%	50V
C015	1-123-875-11	ELECT	10MF	20%	50V
C016	1-124-119-00	ELECT	330MF	20%	16V
C020	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C021	1-163-019-00	CERAMIC CHIP	0.0068MF	10%	50V
C022	1-163-019-00	CERAMIC CHIP	0.0068MF	10%	50V
C023	1-163-019-00	CERAMIC CHIP	0.0068MF	10%	50V
C024	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C025	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C026	1-163-122-00	CERAMIC CHIP	160PF	5%	50V
C027	1-124-477-11	ELECT	47MF	20%	16V
C028	1-124-477-11	ELECT	47MF	20%	16V
C029	1-126-101-11	ELECT	100MF	20%	16V
C030	1-124-791-11	ELECT	1MF	20%	50V
C031	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C032	1-163-112-00	CERAMIC CHIP	62PF	5%	50V
C034	1-124-477-11	ELECT	47MF	20%	16V
C035	1-130-495-00	MYLAR	0.1MF	5%	50V
C036	1-130-495-00	MYLAR	0.1MF	5%	50V
C037	1-130-495-00	MYLAR	0.1MF	5%	50V
C038	1-124-477-11	ELECT	47MF	20%	16V
C039	1-124-477-11	ELECT	47MF	20%	16V
C040	1-130-495-00	MYLAR	0.1MF	5%	50V
C041	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C043	1-124-477-11	ELECT	47MF	20%	16V
C044	1-161-379-00	CERAMIC	0.01MF	30%	16V
C045	1-161-379-00	CERAMIC	0.01MF	30%	16V
C101	1-130-495-00	MYLAR	0.1MF	5%	50V
C102	1-124-477-11	ELECT	47MF	20%	16V
C103	1-124-477-11	ELECT	47MF	20%	16V
C104	1-124-477-11	ELECT	47MF	20%	16V
C105	1-124-477-11	ELECT	47MF	20%	16V
C107	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C108	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C109	1-126-160-11	ELECT	1MF	20%	50V
C110	1-124-477-11	ELECT	47MF	20%	16V
C111	1-130-479-00	MYLAR	0.0047MF	5%	50V
C112	1-130-471-00	MYLAR	0.001MF	5%	50V
C113	1-130-495-00	MYLAR	0.1MF	5%	50V
C114	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C115	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C116	1-124-477-11	ELECT	47MF	20%	16V
C117	1-130-483-00	MYLAR	0.01MF	5%	50V
C118	1-130-483-00	MYLAR	0.01MF	5%	50V
C119	1-130-483-00	MYLAR	0.01MF	5%	50V
C120	1-124-477-11	ELECT	47MF	20%	16V
C121	1-130-477-00	MYLAR	0.0033MF	5%	50V
C122	1-130-483-00	MYLAR	0.01MF	5%	50V
C123	1-124-477-11	ELECT	47MF	20%	16V
C124	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C125	1-130-479-00	MYLAR	0.0047MF	5%	50V
C126	1-131-379-00	TANTALUM	22MF	10%	6.3V

Ref.No	Part No.	Description	Remark		
C127	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C128	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C129	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C130	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C131	1-124-477-11	ELECT	47MF	20%	16V
C132	1-124-477-11	ELECT	47MF	20%	16V
C133	1-126-233-11	ELECT	22MF	20%	25V
C134	1-124-477-11	ELECT	47MF	20%	16V
C135	1-130-479-00	MYLAR	0.0047MF	5%	50V
C136	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C137	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C138	1-130-487-00	MYLAR	0.022MF	5%	50V
C139	1-124-477-11	ELECT	47MF	20%	16V
C140	1-130-487-00	MYLAR	0.022MF	5%	50V
C141	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C143	1-124-477-11	ELECT	47MF	20%	16V
C144	1-164-232-11	CERAMIC CHIP	0.01MF	5%	50V
C148	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C150	1-161-379-00	CERAMIC	0.01MF	30%	16V
C151	1-161-379-00	CERAMIC	0.01MF	30%	16V
C152	1-161-379-00	CERAMIC	0.01MF	30%	16V
C153	1-161-379-00	CERAMIC	0.01MF	30%	16V
<u>CERAMIC FILTER</u>					
CF101	1-527-604-00	FILTER, CERAMIC			
<u>CONNECTOR</u>					
CN001	1-506-467-11	PIN, CONNECTOR 2P			
CN002	1-506-469-11	PIN, CONNECTOR 4P			
CN003	1-506-467-11	PIN, CONNECTOR 2P			
CN004	1-506-470-11	PIN, CONNECTOR 5P			
CN005	1-506-470-11	PIN, CONNECTOR 5P			
<u>DIODE</u>					
D001	8-719-911-19	DIODE 1SS119			
D101	8-719-911-19	DIODE 1SS119			
<u>DELAY LINE</u>					
DL001	1-415-515-11	DELAY LINE			
<u>IC</u>					
IC001	8-759-600-99	IC M51481P			
IC002	8-752-006-12	IC CX20061			
IC003	8-752-330-16	IC CXL5005P			
IC101	8-752-320-31	IC CXL1004P			
IC102	8-752-030-44	IC CXA1018S			
IC103	8-759-950-07	IC SN75107BN			
<u>COIL</u>					
L001	1-410-521-11	INDUCTOR	100UH		
L002	1-410-521-11	INDUCTOR	100UH		
L003	1-410-521-11	INDUCTOR	100UH		
L004	1-410-521-11	INDUCTOR	100UH		
L005	1-410-521-11	INDUCTOR	100UH		
L006	1-410-521-11	INDUCTOR	100UH		
L007	1-410-515-11	INDUCTOR	33UH		
L008	1-410-521-11	INDUCTOR	100UH		
L009	1-410-513-11	INDUCTOR	22UH		
L101	1-410-509-11	INDUCTOR	10UH		
L102	1-410-522-11	INDUCTOR	120UH		
L103	1-410-509-11	INDUCTOR	10UH		
L104	1-410-509-11	INDUCTOR	10UH		
L105	1-410-509-11	INDUCTOR	10UH		
L106	1-410-509-11	INDUCTOR	10UH		

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
L107	1-410-521-11	INDUCTOR 100UH	
L108	1-410-521-11	INDUCTOR 100UH	
L109	1-410-509-11	INDUCTOR 10UH	
L110	1-410-513-11	INDUCTOR 22UH	

LOWPASS FILTER

LPF001	1-235-924-11	FILTER, LOW PASS (4.5MHZ)	
LPF101	1-235-923-11	FILTER, LOW PASS (5MHZ)	

TRANSISTOR

Q003	8-729-100-66	TRANSISTOR 2SC1623	
Q005	8-729-100-66	TRANSISTOR 2SC1623	
Q006	8-729-100-66	TRANSISTOR 2SC1623	
Q007	8-729-100-66	TRANSISTOR 2SC1623	
Q008	8-729-100-66	TRANSISTOR 2SC1623	
Q009	8-729-100-66	TRANSISTOR 2SC1623	
Q010	8-729-100-66	TRANSISTOR 2SC1623	
Q011	8-729-100-66	TRANSISTOR 2SC1623	
Q012	8-729-100-66	TRANSISTOR 2SC1623	
Q013	8-729-216-22	TRANSISTOR 2SA1162	
Q014	8-729-100-66	TRANSISTOR 2SC1623	
Q101	8-729-100-66	TRANSISTOR 2SC1623	
Q102	8-729-100-66	TRANSISTOR 2SC1623	
Q103	8-729-100-66	TRANSISTOR 2SC1623	
Q105	8-729-100-66	TRANSISTOR 2SC1623	
Q106	8-729-100-66	TRANSISTOR 2SC1623	
Q107	8-729-216-22	TRANSISTOR 2SA1162	
Q108	8-729-100-66	TRANSISTOR 2SC1623	
Q109	8-729-216-22	TRANSISTOR 2SA1162	
Q110	8-729-103-19	TRANSISTOR 2SA1206-K1	
Q111	8-729-190-12	TRANSISTOR 2SC2901-K	
Q112	8-729-100-66	TRANSISTOR 2SC1623	
Q113	8-729-216-22	TRANSISTOR 2SA1162	
Q114	8-729-100-66	TRANSISTOR 2SC1623	

RESISTOR

R008	1-216-049-00	METAL GLAZE 1K	5%	1/10W
R009	1-216-049-00	METAL GLAZE 1K	5%	1/10W
R010	1-216-049-00	METAL GLAZE 1K	5%	1/10W
R011	1-216-049-00	METAL GLAZE 1K	5%	1/10W
R016	1-216-081-00	METAL GLAZE 22K	5%	1/10W
R017	1-216-057-00	METAL GLAZE 2.2K	5%	1/10W
R018	1-216-049-00	METAL GLAZE 1K	5%	1/10W
R019	1-216-055-00	METAL GLAZE 1.8K	5%	1/10W
R020	1-216-041-00	METAL GLAZE 470	5%	1/10W
R021	1-216-049-00	METAL GLAZE 1K	5%	1/10W
R022	1-216-049-00	METAL GLAZE 1K	5%	1/10W
R023	1-216-041-00	METAL GLAZE 470	5%	1/10W
R024	1-216-051-00	METAL GLAZE 1.2K	5%	1/10W
R025	1-216-045-00	METAL GLAZE 680	5%	1/10W
R026	1-216-041-00	METAL GLAZE 470	5%	1/10W
R027	1-216-049-00	METAL GLAZE 1K	5%	1/10W
R028	1-216-049-00	METAL GLAZE 1K	5%	1/10W
R029	1-216-041-00	METAL GLAZE 470	5%	1/10W
R030	1-216-049-00	METAL GLAZE 1K	5%	1/10W
R031	1-216-039-00	METAL GLAZE 390	5%	1/10W
R032	1-216-049-00	METAL GLAZE 1K	5%	1/10W
R033	1-216-049-00	METAL GLAZE 1K	5%	1/10W
R034	1-216-083-00	METAL GLAZE 27K	5%	1/10W
R035	1-216-085-00	METAL GLAZE 33K	5%	1/10W
R036	1-216-049-00	METAL GLAZE 1K	5%	1/10W
R037	1-216-049-00	METAL GLAZE 1K	5%	1/10W
R038	1-216-121-00	METAL GLAZE 1M	5%	1/10W
R039	1-216-067-00	METAL GLAZE 5.6K	5%	1/10W
R040	1-216-049-00	METAL GLAZE 1K	5%	1/10W
R041	1-216-049-00	METAL GLAZE 1K	5%	1/10W

Ref.No	Part No.	Description	Remark
R042	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R044	1-216-053-00	METAL GLAZE 1.5K	5% 1/10W
R045	1-216-091-00	METAL GLAZE 56K	5% 1/10W
R046	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R047	1-216-041-00	METAL GLAZE 470	5% 1/10W

R050	1-216-025-00	METAL GLAZE 100	5% 1/10W
R101	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R102	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R103	1-216-121-00	METAL GLAZE 1M	5% 1/10W
R104	1-216-049-00	METAL GLAZE 1K	5% 1/10W

R105	1-216-025-00	METAL GLAZE 100	5% 1/10W
R106	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W
R107	1-216-099-00	METAL GLAZE 120K	5% 1/10W
R108	1-216-109-00	METAL GLAZE 330K	5% 1/10W
R109	1-216-075-00	METAL GLAZE 12K	5% 1/10W

R110	1-216-089-00	METAL GLAZE 47K	5% 1/10W
R111	1-216-097-00	METAL GLAZE 100K	5% 1/10W
R112	1-216-748-11	METAL GLAZE 39K	5% 1/10W
R113	1-216-097-00	METAL GLAZE 100K	5% 1/10W
R114	1-216-095-00	METAL GLAZE 82K	5% 1/10W

R115	1-216-113-00	METAL GLAZE 470K	5% 1/10W
R116	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W
R117	1-216-097-00	METAL GLAZE 100K	5% 1/10W
R118	1-216-113-00	METAL GLAZE 470K	5% 1/10W
R119	1-216-083-00	METAL GLAZE 27K	5% 1/10W

R120	1-216-097-00	METAL GLAZE 100K	5% 1/10W
R121	1-216-089-00	METAL GLAZE 47K	5% 1/10W
R122	1-216-105-00	METAL GLAZE 220K	5% 1/10W
R123	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R124	1-216-109-00	METAL GLAZE 330K	5% 1/10W

R125	1-216-023-00	METAL GLAZE 82	5% 1/10W
R126	1-216-061-00	METAL GLAZE 3.3K	5% 1/10W
R127	1-216-089-00	METAL GLAZE 47K	5% 1/10W
R128	1-216-109-00	METAL GLAZE 330K	5% 1/10W
R129	1-216-075-00	METAL GLAZE 12K	5% 1/10W

R130	1-216-748-11	METAL GLAZE 39K	5% 1/10W
R131	1-216-091-00	METAL GLAZE 56K	5% 1/10W
R132	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R133	1-216-097-00	METAL GLAZE 100K	5% 1/10W
R134	1-216-097-00	METAL GLAZE 100K	5% 1/10W

R135	1-216-055-00	METAL GLAZE 1.8K	5% 1/10W
R136	1-216-055-00	METAL GLAZE 1.8K	5% 1/10W
R137	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R138	1-216-053-00	METAL GLAZE 1.5K	5% 1/10W
R139	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W

R140	1-216-041-00	METAL GLAZE 470	5% 1/10W
R141	1-216-045-00	METAL GLAZE 680	5% 1/10W
R142	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R143	1-216-061-00	METAL GLAZE 3.3K	5% 1/10W
R144	1-216-049-00	METAL GLAZE 1K	5% 1/10W

R145	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R146	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R147	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R148	1-216-083-00	METAL GLAZE 27K	5% 1/10W
R149	1-216-049-00	METAL GLAZE 1K	5% 1/10W

R150	1-216-041-00	METAL GLAZE 470	5% 1/10W
R151	1-216-041-00	METAL GLAZE 470	5% 1/10W
R152	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R153	1-216-077-00	METAL GLAZE 15K	5% 1/10W

VARIABLE RESISTOR

RV004	1-228-993-00	RES, ADJ, CARBON 4.7K	
RV005	1-230-504-11	RES, ADJ, CARBON 220	
RV006	1-228-993-00	RES, ADJ, CARBON 4.7K	
RV101	1-228-994-00	RES, ADJ, CARBON 10K	
RV103	1-228-995-00	RES, ADJ, CARBON 22K	

When indicating parts by reference number, please include the board name.

VP-21

AC-80

MD-43

MD-44

PW-90, 91

FP-300

SW-151

SW-152

Ref.No	Part No.	Description	Remark
RV104	1-228-991-00	RES, ADJ, CARBON 2.2K	
RV105	1-230-504-11	RES, ADJ, CARBON 220	

Ref.No	Part No.	Description	Remark
*1-634-266-11	PW-90 BOARD (Ref. No. 8000 Series)		
*1-634-267-11	PW-91 BOARD (Ref. No. 8000 Series)		

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\*1-634-263-11 AC-80 BOARD (Ref. No. 5000 Series)  
\*\*\*\*\*

△1-533-189-11 HOLDER, FUSE

CAPACITOR

C001	△1-136-345-51	FILM	0.1MF	20%	125V
C002	.1-161-742-00	CERAMIC	0.0022MF	20%	400V

CONNECTOR

CN001	△1-564-419-11	HEADER, SPRING (POWER) 2P
CN002	*1-506-371-21	PIN, CONNECTOR 2P
CN003	*1-564-420-11	HEADER, SPRING (POWER) 3P

FUSE

F001	△1-532-742-11	FUSE, GLASS TUBE 1.6A 1.25V
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RESISTOR

R001	△1-202-663-51	SOLID	5.6M	20%	1/2W
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TRANSFORMER

T001	△1-421-771-11	FILTER, LINE
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\*1-634-274-11 MD-43 BOARD (Ref. No. 1000 Series)  
\*\*\*\*\*

CAPACITOR

C802	1-161-494-00	CERAMIC	0.022MF	25V
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CONNECTOR

CN802	*1-560-890-00	PIN, CONNECTOR 2P
-------	---------------	-------------------

\*\*\*\*\*

\*1-634-275-11 MD-44 BOARD (Ref. No. 1000 Series)  
\*\*\*\*\*

CAPACITOR

C803	1-161-494-00	CERAMIC	0.022MF	25V
C804	1-126-233-11	ELECT	22MF	20% 25V

CONNECTOR

CN803	*1-560-892-00	PIN, CONNECTOR 4P
-------	---------------	-------------------

IC

IC801	8-759-962-08	IC BA6208
-------	--------------	-----------

RESISTOR

R801	1-247-731-11	CARBON	22	5%	1/2W F
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CONNECTOR

CN031	△1-564-420-11	HEADER, SPRING (POWER) 3P
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TRANSFORMER

PT031	△1-449-667-11	TRANSFORMER, POWER
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\*\*\*\*\*

\*1-634-264-11 FP-300 BOARD (Ref. No. 3000 Series)  
\*\*\*\*\*

\*3-728-445-01 HOLDER, LED

CONNECTOR

CN011	1-506-485-11	PIN, CONNECTOR 6P
-------	--------------	-------------------

DIODE

D011	8-719-920-66	DIODE SLR-54VC12 (EXT CPU)
D012	8-719-955-04	DIODE PY5504S-1 (IN USE)

TRANSISTOR

Q011	8-729-900-36	TRANSISTOR DTC124ES
Q012	8-729-900-36	TRANSISTOR DTC124ES

RESISTOR

R011	1-249-410-11	CARBON	270	5%	1/4W
R012	1-249-410-11	CARBON	270	5%	1/4W
R013	1-249-429-11	CARBON	10K	5%	1/4W

SWITCH

S011	1-570-472-11	SWITCH, KEY BOARD (OPEN/CLOSE)
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\*1-634-269-11 SW-151 BOARD (Ref. No. 1000 Series)  
\*\*\*\*\*

DIODE

D204	8-719-950-63	DIODE GP1S17
D205	8-719-950-63	DIODE GP1S17
D206	8-719-950-63	DIODE GP1S17

RESISTOR

R202	1-249-407-11	CARBON	150	5%	1/4W
R203	1-249-434-11	CARBON	27K	5%	1/4W
R204	1-249-407-11	CARBON	150	5%	1/4W
R205	1-249-434-11	CARBON	27K	5%	1/4W
R206	1-249-407-11	CARBON	150	5%	1/4W
R207	1-249-434-11	CARBON	27K	5%	1/4W

\*\*\*\*\*

\*1-634-270-11 SW-152 BOARD (Ref. No. 1000 Series)  
\*\*\*\*\*

DIODE

D202	8-719-920-74	DIODE EE-SF5-B
D203	8-719-920-74	DIODE EE-SF5-B

When indicating parts by reference number, please include the board name.

Note:  
The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Note:  
Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No Part No. Description Remark

\*1-634-262-11 DC-42 BOARD (Ref. No. 6000 Series)
\*\*\*\*\*

TRANSISTOR

Q705 8-729-804-17 TRANSISTOR 2SD1666-R
Q706 8-729-804-68 TRANSISTOR 2SB1133-S

\*\*\*\*\*

\*1-634-268-11 SW-150 BOARD (Ref. No. 1000 Series)
\*\*\*\*\*

DIODE

D201 8-719-939-05 DIODE GP1S54

RESISTOR

R201 1-249-407-11 CARBON 150 5% 1/4W

\*\*\*\*\*

\*1-634-261-11 DC-41 BOARD (Ref. No. 6000 Series)
\*\*\*\*\*

TRANSISTOR

Q704 8-729-804-68 TRANSISTOR 2SB1133-R

\*\*\*\*\*

\*1-634-273-11 MD-42 BOARD (Ref. No. 1000 Series)
\*\*\*\*\*

CAPACITOR

C801 1-161-494-00 CERAMIC 0.022MF 25V

CONNECTOR

CN801 \*1-560-890-00 PIN, CONNECTOR 2P

MOTOR

M904 1-541-659-11 MOTOR, DC (SLIDE)

\*\*\*\*\*

\*1-634-271-11 SW-153 BOARD (Ref. No. 1000 Series)
\*\*\*\*\*

DIODE

D207 8-719-939-05 DIODE GP1S54
D208 8-719-939-05 DIODE GP1S54

RESISTOR

R208 1-249-407-11 CARBON 150 5% 1/4W
R209 1-249-429-11 CARBON 10K 5% 1/4W
R210 1-249-407-11 CARBON 150 5% 1/4W
R211 1-249-429-11 CARBON 10K 5% 1/4W

When indicating parts by reference number, please include the board name.

Ref.No Part No. Description Remark

MISCELLANEOUS
\*\*\*\*\*

1-526-920-12 AC OUTLET (WITH EARTH)
1-534-517-81 CORD, POWER (SJT)
8-848-069-01 DEVICE, OPTICS KSC-120A
J901 1-507-195-21 SPECIAL REMOTE CONTROL JACK
M901 A-6491-037-A MOTOR ASSY, SPINDLE
M902 X-3713-206-1 MOTOR BLOCK ASSY, SKEW
M903 X-3713-208-1 MOTOR ASSY, LD (LOADING)
S301 1-570-810-11 SWITCH, PUSH (1 KEY) (CHUCK)

ACCESSORIES & PACKING MATERIALS
\*\*\*\*\*

\*3-694-922-01 SHEET, PROTECTION
\*3-728-471-01 CUSHION (UPPER)
\*3-728-472-01 CUSHION (LOWER)
\*3-728-488-01 INDIVIDUAL CARTON
3-751-327-21 MANUAL, INSTRUCTION (ENGLISH, FRENCH)
3-751-745-21 INSTRUCTION

HARDWARE LIST
\*\*\*\*\*

7-685-648-79 SCREW, TAPPING
7-682-545-04 SCREW +P 3X4
7-682-547-04 SCREW +B 3X6
7-682-560-04 SCREW +B 4X6
7-682-647-09 SCREW +PSW 3X6
7-682-661-09 SCREW +PSW 4X8
7-685-645-79 SCREW +BVTP 3X6 TYPE2 IT-3
7-685-646-79 SCREW +BVTP 3X8 TYPE2 IT-3
7-685-646-79 HEAD, WASHER, TAPPING SCREW
7-685-647-79 SCREW +BVTP 3X10 TYPE2 IT-3
7-685-648-79 SCREW +BVTP 3X12 TYPE2 IT-3

Note: The components identified by mark A or dotted line with mark A are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par une marque A sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

## SECTION 7 ELECTRICAL ADJUSTMENTS

See adjusting elements location diagram on page 94 for the adjustments.

### 7-1. MEASUREMENT TOOL

- Oscilloscope
- Color monitor TV (NTSC)
- Digital voltmeter
- Audio level meter
- Frequency counter
- Remote control unit (RM-2001)
- Servo checker Jig (J-6166-370-A)
- Alignment disc REF5F-12CAD (8-847-018-00)

Standard disc for adjusting this machine is REF5F-12CAD (8-847-018-00), whereas, the adjusting items without particular notice can be adjusted by the following alignment disc.

REF5A-12CAD	}	(8-847-018-00)
REF5B-6Z079		
REF5C-6Z079		
REF5E-12CAD		

For the adjusting items with notices, follow those indications.

- Signal generator
- Connection harness (J-6082-068-A)

### 7-2. CAUTIONS ON ADJUSTMENT

- Do not open or close the disc table while standing up the player on its side. (Do not press the OPEN button.)
- When standing the player up, set the right side, facing the front panel, downward and turn OFF the power supply.

### 7-3. SERVO CHECKER JIG

The servo checker jig is used for focus and tracking servo adjustments.

- SERVO CHECKER jig (J-6166-370-A)
- Connection harness (J-6082-068-A)

#### 7-3-1. Connection harness (J-6082-068-A)

- 1) Connect the connection harness as shown in the following figure.

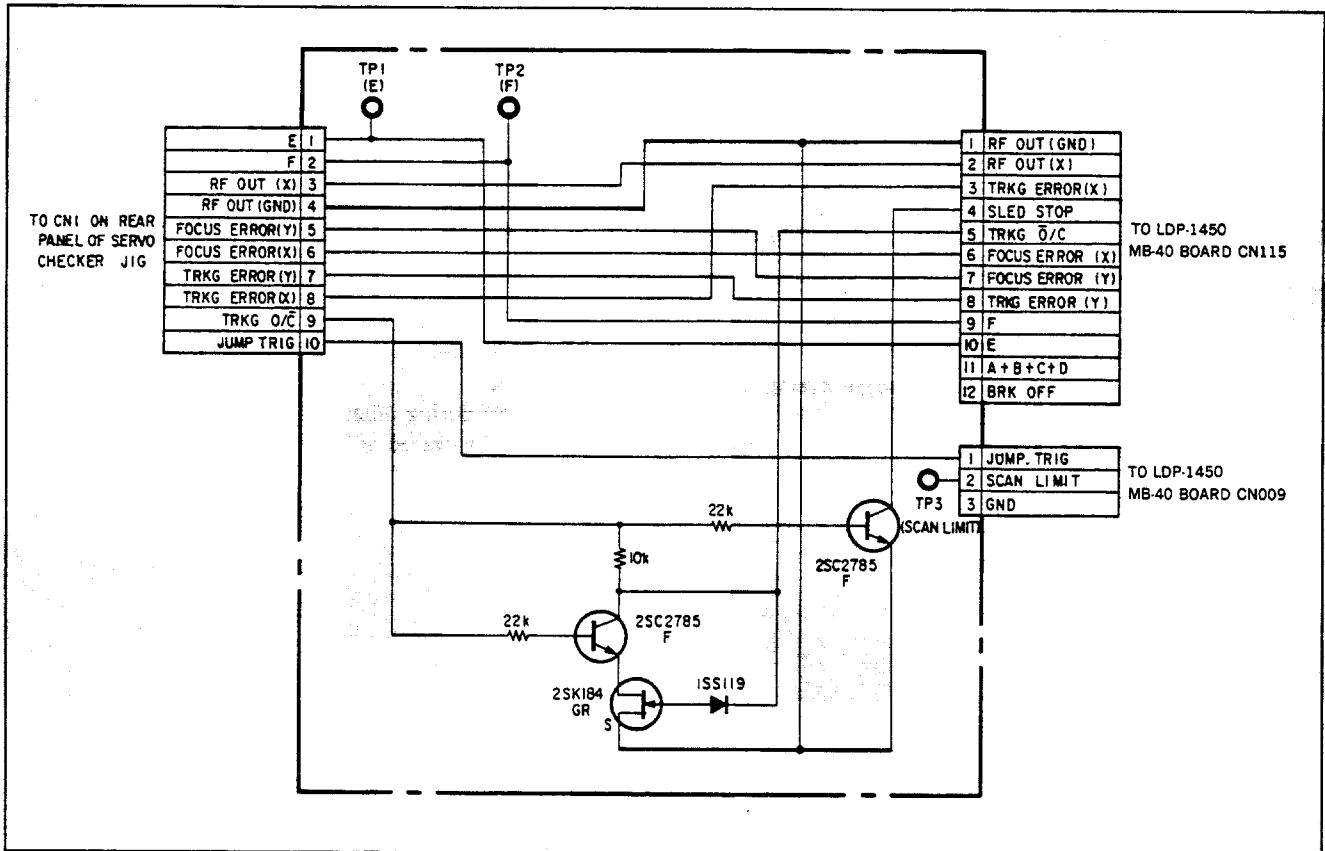


Fig. 7-1. CONNECTION HARNESS SCHEMATIC DIAGRAM

### 7-3-2. Terminals and Switches

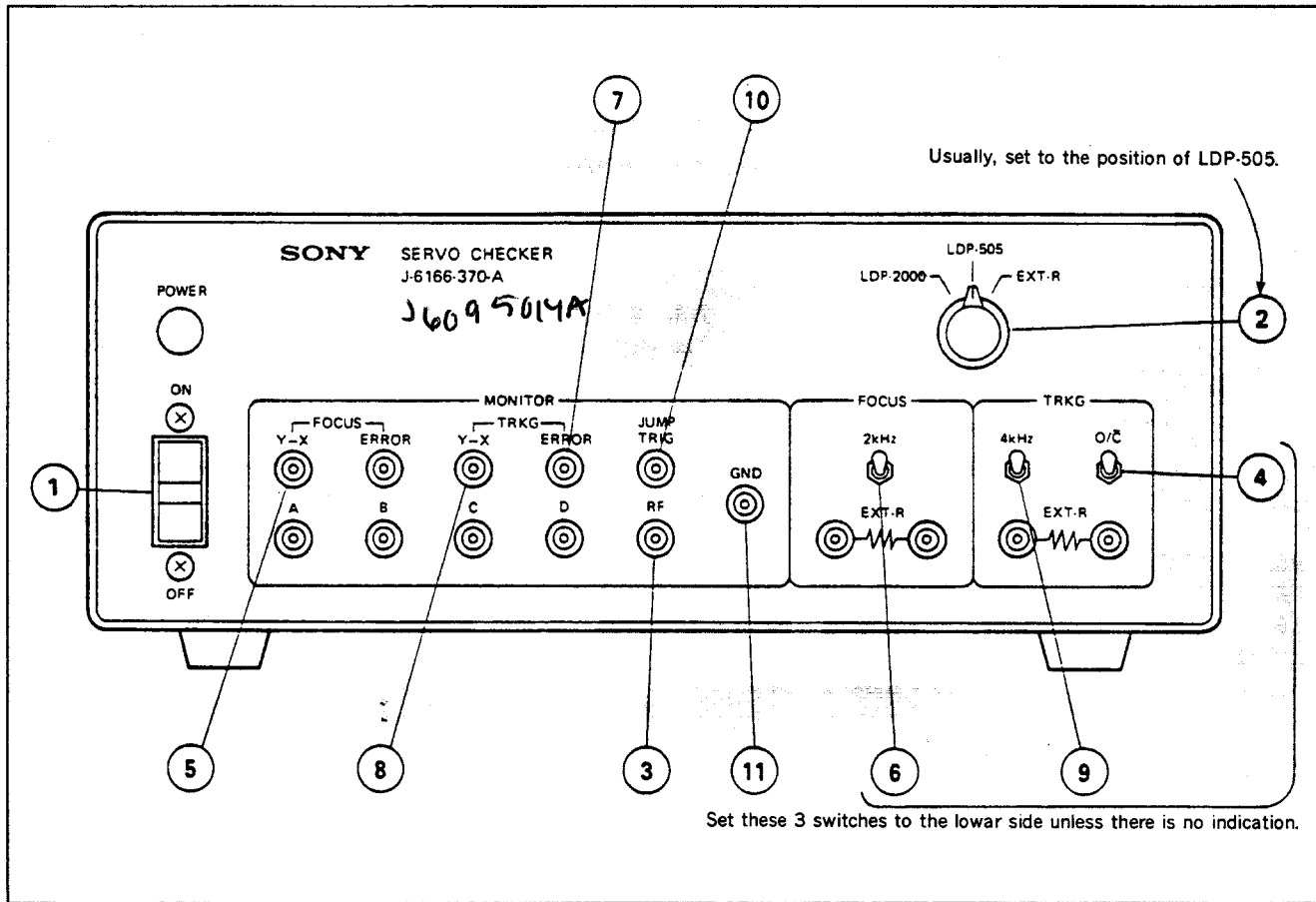
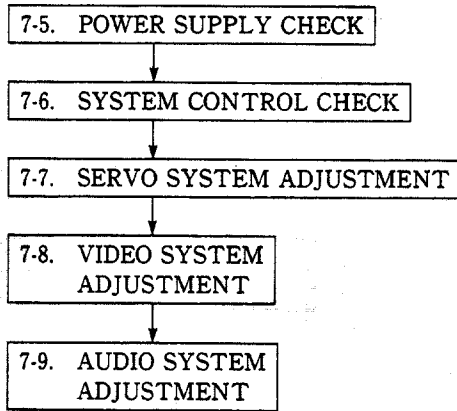


Fig. 7-2.

- ① POWER switch
- ② Mode selector ..... Set to LDP-505 during adjustment.
- ③ RF terminal ..... Connect oscilloscope during focus offset adjustment and RF level one.
- ④ TRKG O/C switch ..... Set to O (open) only during tracking offset adjustment and to C̄ (close) during other adjustments.
- ⑤ FOCUS Y-X terminal ..... Connect oscilloscope during focus gain adjustment.
- ⑥ FOCUS 2kHz switch ..... Turn it on during FOCUS gain adjustment and to off during other adjustments.
- ⑦ TRKG ERROR terminal ... Connect oscilloscope during tracking offset adjustment and tract jump adjustment.
- ⑧ TRKG Y-X terminal ..... Connect oscilloscope during tracking gain adjustment.
- ⑨ TRKG 4kHz switch ..... Turn it on during tracking gain adjustment and to off during other adjustments.
- ⑩ JUMP TRIG terminal ..... Connect oscilloscope during track jump adjustment. (Triggered at TRKG jump)
- ⑪ GND terminal

#### 7-4. ADJUSTMENT SEQUENCE

Make adjustment in the following sequence.



#### 7-5. POWER SUPPLY CHECK (DC-40 BOARD)

##### 7-5-1. Power Supply Voltage Check

Mode	No disc
Measurement instrument	Digital voltmeter
UNREG +15V CHECK	
Measurement point	Pin ① of CN003 (GND: Pin ⑦ of CN003)
Specified value	+17.0±2.0Vdc
UNREG -15V CHECK	
Measurement point	Pin ⑩ of CN003 (GND: Pin ⑦ of CN003)
Specified value	-17.0±2.0Vdc
REG +12V CHECK	
Measurement point	Pin ③ of CN003 (GND: Pin ⑦ of CN003)
Specified value	+11.3±0.4Vdc
REG +9V CHECK	
Measurement point	Pin ④ of CN003 (GND: Pin ⑦ of CN003)
Specified value	+9.0±0.4Vdc
REG -9V CHECK	
Measurement point	Pin ⑨ of CN003 (GND: Pin ⑦ of CN003)
Specified value	-9.0±0.4Vdc
REG +5V CHECK	
Measurement point	Pin ⑤ of CN003 (GND: Pin ⑦ of CN003)
Specified value	+5.0±0.3Vdc
REG -5V CHECK	
Measurement point	Pin ⑧ of CN003 (GND: Pin ⑦ of CN003)
Specified value	-5.0±0.3Vdc

##### [Checking procedure]

- 1) Each power supply voltage shall fulfill the specified value.

##### DC-40 BOARD (COMPONENT SIDE)

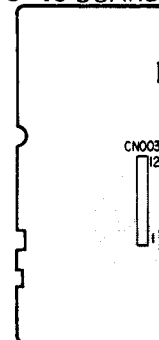


Fig. 7-3.



## 7-6. SYSTEM CONTROL CHECK (MB-40 BOARD)

### 7-6-1. 500kHz Clock Check

Mode	FWD play
Signal	REF 5A/5B/5C/5E/5F
Measurement point	Pin ⑩ of IC313
Measurement instrument	Frequency counter
Specified value	$500 \pm 20\text{kHz}$

**Note:** Connect the frequency counter through a buffer amplifier (Oscilloscope, etc.) of high input impedance ( $1\text{M}\Omega$  or more) and low capacity (10pF or less).

#### [Adjustment procedure]

- 1) Set the unit into FWD play mode.
- 2) Check that the frequency is  $500 \pm 20\text{kHz}$ .

### 7-6-2. Baud Rate Clock Check

Mode	FWD play
Signal	REF 5A/5B/5C/5E/5F
Measurement point	Pin ⑨ of IC903
Measurement instrument	Frequency counter
Specified value	See table 7-1.

**Note:** Connect the frequency counter through a buffer amplifier (Oscilloscope, etc.) of high input impedance ( $1\text{M}\Omega$  or more) and low capacity (10pF or less).

#### [Adjustment procedure]

- 1) Set the unit into FWD play mode.
- 2) Check that the frequency is at the standard value when each switch of SW901 is turned on. (The first two digit numbers should be same as those of standard value)

Switch for turning on	Frequency of Pin ⑨ of IC903
1	19.2kHz
2	38.4kHz
3	76.8kHz
4	153.6kHz

table. 7-1.

## 7-6-3. Function Switch Check

Mode	FWD play
Signal	REF 5A/5B/5C/5E/5F
Measurement point	Pin ⑬ to ⑰ of IC902
Measurement instrument	Digital voltmeter
Specified value	"L" at 0 to 0.5Vdc "H" at 4.5 to 5.0Vdc

#### [Adjustment procedure]

- 1) Set the unit into FWD play mode.
- 2) Turn on or off each switch (1 to 6) of SW902, and check that each voltage of terminal of Pin ⑬ to ⑰ of IC902 becomes "L" or "H".

7-7. SERVO SYSTEM ADJUSTMENT (MB-40 BOARD)  
 7-7-1. REF-H Delay Adjustment (MB-40 Board)

Mode	FWD play
Signal	REF 5A/5B/5C/5E/5F
Measurement point	CH1 : Pin ⑫ of IC203 CH2 : Pin ⑬ of IC203 Trig : CH2
Measurement instrument	Oscilloscope
Adjusting element	RV202
Specified value	$\Delta t = 32 \pm 2 \mu\text{S}$

[Adjustment procedure]

- 1) Adjust with RV202 so that the  $\Delta t$  value becomes  $32 \pm 2 \mu\text{s}$ .

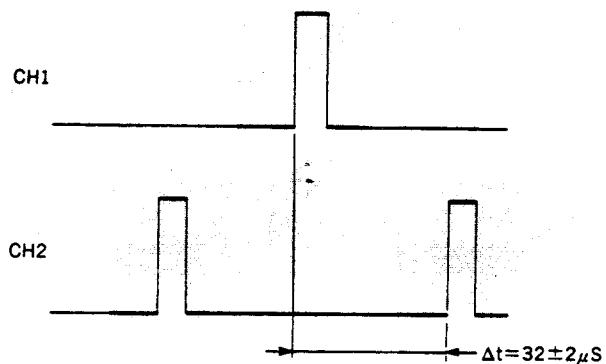


Fig. 7-4.

7-7-2. Tracking Drive Offset Adjustment (MB-40 Board)

Mode	Power ON (No disc)
Signal	No disc
Measurement point	Pin ⑦ of FN001 (TP305)
Measurement instrument	Oscilloscope (DC range)
Adjusting element	RV201
Specified value	$0 \pm 5 \text{mVdc}$

[Adjustment procedure]

- 1) Set the unit into Power ON mode.
- 2) Adjust for  $0 \pm 5 \text{mVdc}$  with RV201.

### 7-7-3. RD Adjustment (MAIN CHASSIS)

Mode	Still
Signal	REF 5A/5B/5C/5E/5F, frame 12000
Measurement point	CH1: Pin ⑨ of CN115 CH2: Pin ⑩ of CN115
Measurement instrument	Oscilloscope (X-Y MODE)
Adjusting element	Guide B ADJ claw
Specified value	A: B=1: 3

**Note:** From this 7-7-8, setting should be performed on the horizontal condition.

#### [Adjustment procedure]

- 1) Perform searching of frame 12000. (Press **SEARCH** **1** **2** **0** **0** **0** **ENTER** of remote control unit.)
- 2) Release the claw A.
- 3) Open tracking servo. (Set TRKG O/C switch of servo checker to O(open) side.)
- 4) Adjust guide B ADJ claw for A: B=1: 3.
- 5) Turn claw A clockwise for 90°, and lock.
- 6) Close the tracking servo, and search the frame 12000, and confirm that the output waveform which trails in the right upper direction. (Refer to Fig. 7-7.)  
(if the waveform trails in the lower left direction, repeat it by returning to 1.)

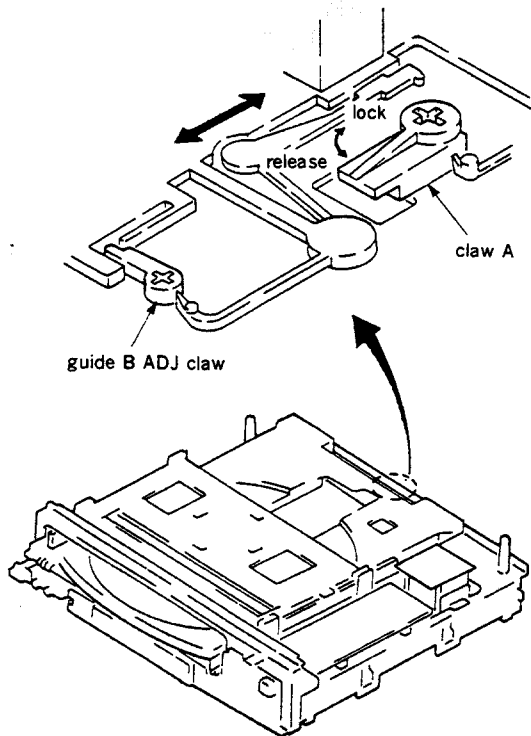
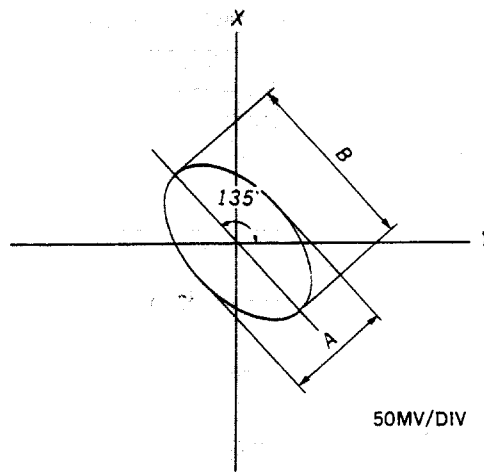


Fig. 7-5.



A: B=1: 3

Fig. 7-6.

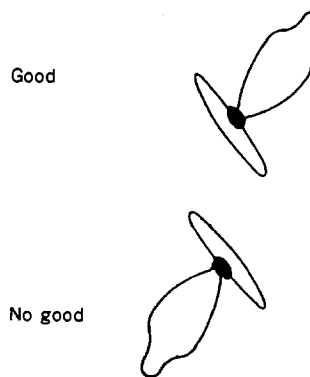


Fig. 7-7.

### 7-7-4. Skew Adjustment (MB-40 Board)

Mode	Still
Signal	REF 5A/5B/5C/5E/5F, frame 9000
Measurement point	Pin ② of CN115
Measurement instrument	Oscilloscope
Adjusting element	RV304
Specified value	Maximum

#### [Adjustment procedure]

- 1) Perform searching of frame 9000. (Press **SEARCH** **9** **0** **0** **0** **ENTER** of remote control unit.)
- 2) Maximize the RF output waveform level with RV304.



Fig. 7-8.

### 7-7-6. Focus Offset Adjustment (MB-40 Board)

Mode	Still
Signal	REF 5A/5B/5C/5E/5F, frame 13501
Measurement point	Pin ② of CN115
Measurement instrument	Oscilloscope
Adjusting element	RV302
Specified value	Maximum

#### [Adjustment procedure]

- 1) Perform searching of frame 13501. (Press **SEARCH** **1** **3** **5** **0** **1** **ENTER** of remote control unit.)
- 2) Maximize the RF output waveform level with RV302.



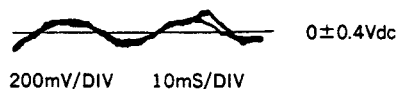
Fig. 7-10.

### 7-7-5. Focus Gain Adjustment (MB-40 Board)

Mode	Still
Signal	REF 5A/5B/5C/5E/5F, frame 13501
Measurement point	FOCUS Y-X terminal (servo checker)
Measurement instrument	Oscilloscope (DC range)
Adjusting element	RV303
Specified value	$0 \pm 0.4Vdc$

#### [Adjustment procedure]

- 1) Perform searching of frame 13501. (Press **SEARCH** **1** **3** **5** **0** **1** **ENTER** of remote control unit.)
- 2) Turn on the FOCUS 2kHz switch of servo checker.
- 3) Adjust with RV303 so that average value of waveform becomes  $0 \pm 0.4Vdc$ .
- 4) Turn off the FOCUS 2kHz switch of servo checker.



Adjust so that average value of waveform becomes  $0 \pm 0.4Vdc$ .

Fig. 7-9.

### 7-7-7. Tracking Gain Adjustment (MB-40 Board)

Mode	Still
Signal	REF 5A/5B/5C/5E/5F, frame 13501
Measurement point	TRKG Y-X terminal (servo checker)
Measurement instrument	Oscilloscope (DC range)
Adjusting element	RV301
Specified value	$0 \pm 0.2Vdc$

#### [Adjustment procedure]

- 1) Perform searching of frame 13501. (Press **SEARCH** **1** **3** **5** **0** **1** **ENTER** of remote control unit.)
- 2) Turn on the TRKG 4kHz switch of servo checker.
- 3) Adjust with RV301 so that average value of waveform becomes  $0 \pm 0.2Vdc$ .
- 4) Turn off the TRKG 4kHz switch of servo checker.



Adjust so that average value of waveform becomes  $0 \pm 0.2Vdc$ .

Fig. 7-11.

### 7-7-8. Tracking Offset Adjustment (MB-40 Board)

Mode	Still
Signal	REF 5A/5B/5C/5E/5F, frame 13501
Measurement point	TRKG ERROR terminal (servo checker)
Measurement instrument	Oscilloscope (DC range)
Adjusting element	RV300
Specified value	A = B

#### [Adjustment procedure]

- 1) Perform searching of frame 13501. (Press **SEARCH** **1** **3** **5** **0** **1** **ENTER** of remote control unit.)
- 2) Open tracking servo.  
(Set TRKG O/C switch of servo checker to O (open side).)
- 3) Set the center voltage of the tracking error signal to 0 ± 0.1Vdc using RV300.
- 4) Close tracking servo.

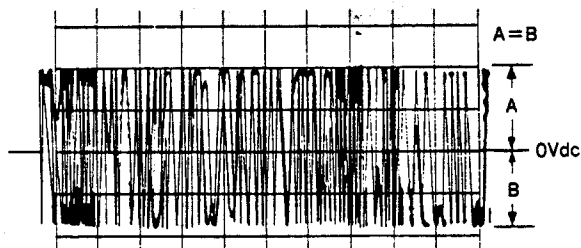


Fig. 7-12.

### 7-7-9. In Limit/Out Limit Adjustment

#### (A) In Limit Check

Mode	Still, REV, X3 (REV Side)
Signal	REF5F, frame 00001
Measurement point	} Monitor
Measurement instrument	
Specified value	⑦ ⑧ ⑨ ⑩ ⑪

#### [Checking procedure]

- 1) Short E001 and TP011 of the FP-300 board, and set the TEST MODE.
- 2) Perform searching of frame 00001. (Press **SEARCH** **0** **0** **0** **0** **1** **ENTER** of remote control unit.)
- 3) Set to **REV**.
- 4) Set to **×3** (REV side).
- 5) Check that the position of the In Limit satisfies with the specified value.
- 6) After the check, check the (B) 12 Inch Disc Out Limit.



Fig. 7-13.

(B) 12 Inch Disc Out Limit Check

Mode	Still, FWD, X3 (FWD Side)
Signal	REF5F, frame 54000
Measurement point	} Monitor
Measurement instrument	
Adjusting element	Fig. 7-15
Specified value	⑥ ⑦ ⑧ ⑨ ⑩

[Checking procedure]

- 1) Perform searching of frame 54000. (Press **SEARCH** 5 4 0 0 0 of remote control unit.)
- 2) Set to **FWD**.
- 3) Set to **×3** (FWD side).
- 4) Check that the position of the 12 Inch Disc Out Limit satisfies with the specified value.



Fig. 7-14.

(C) In Limit/Out Limit Adjustment

- 1) When either or both of (A) In Limit Check or/and (B) 12 Inch Disc Out Limit Check is/are not good, perform the following procedures.
  - ① In case of within the specified value (⑤ and ④, etc.), move a knob in the direction of ① with a press in the direction of arrow A.
  - ② In case of out of the specified value (⑫ and ⑬, etc.), move a knob in the direction of ② with a press in the direction of arrow A.

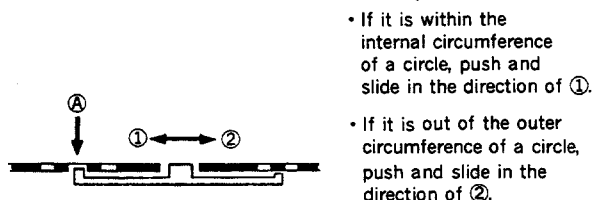
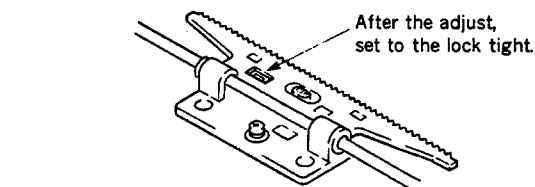


Fig. 7-15.

- 2) Confirm (A) In Limit Check and (B) 12 Inch Disc Out Limit Check again.
- 3) After the adjustment, open E011 and TP011 of the FP-300 board.

7-8. VIDEO SYSTEM ADJUSTMENT

7-8-1. RF Level Check (MB-40 Board)

Mode	Still
Signal	REF 5A/5B/5C/5E/5F, frame 31000
Measurement point	Pin ⑨ of FN001
Measurement instrument	Oscilloscope
Specified value	More than 300mV

[Checking procedure]

- 1) Perform searching of frame 31000. (Press **SEARCH** 3 1 0 0 0 **ENTER** of remote control unit.)
- 2) Check that the RF level is more than 300mV.



Fig. 7-16.

7-8-2. DE-MOD Out Level Adjustment (VP-21 Board)

Mode	Still
Signal	REF 5A/5B/5C/5E/5F, frame 13501
Measurement point	TP101 (Emitter of Q101)
Measurement instrument	Oscilloscope
Adjusting element	RV005
Specified value	$1.00 \pm 0.05V_{p-p}$

[Adjustment procedure]

- 1) Perform searching of frame 13501. (Press **SEARCH** 1 3 5 0 1 **ENTER** of remote control unit.)
- 2) Adjust for  $1.00 \pm 0.05V_{p-p}$  with RV005.

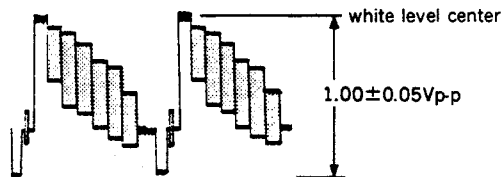


Fig. 7-17.

### 7-8-3. DOC Level Adjustment (VP-21 Board)

Mode	Still
Signal	REF 5A/5B/5C/5E/5F, frame 13501 (color bar)
Measurement point	CH1: Pin ⑦ of IC002 (TP007) CH2: Pin ② of IC002 (TP008)
Measurement instrument	Oscilloscope
Adjusting element	RV006
Specified value	V1 (CH1 Level)=V2 (CH2 Level)

#### [Adjustment procedure]

- 1) Set the unit into still mode.
- 2) Perform searching of frame 13501. (Press **SEARCH** **1 3 5 0 1** **ENTER** of remote control unit.)
- 3) Make adjustment with RV006 so that output levels of CH1 and CH2 are same.

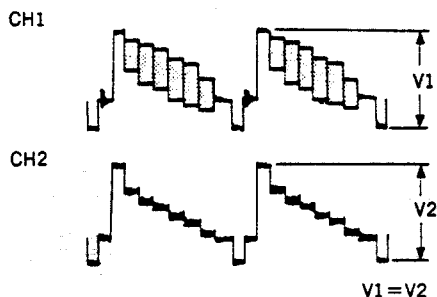


Fig. 7-18.

### 7-8-4. DO-DET Adjustment (VP-21 Board)

Mode	No disc
Signal	Input the sine wave signals of 5.2MHz, 300mVp-p or 5.4MHz, 300mVp-p to Pin ① of CN001 from the signal generator.
Measurement point	Pin ① of IC001
Measurement instrument	Oscilloscope (DC range)
Adjusting element	RV004
Specified value	"H" at 5.2MHz (more than 3Vdc) "L" at 5.4MHz (less than 1Vdc)

#### [Adjustment procedure]

- 1) Input a 5.2MHz, 300mVp-p sine wave.
- 2) Rotate RV004 until a approx. 3.5Vp-p random pulse is output from Pin ① of IC001, and remember the rotational position of RV004 at this time.
- 3) Change the input signal to 5.4MHz, 300mVp-p sine wave.
- 4) Rotate RV004 until a approx. 3.5Vp-p random pulse is output from Pin ① of IC001, and remember the rotational position of RV004 at this time.
- 5) Set RV004 to a center position between the positions noted in 2) and 4).
- 6) Confirm that the level at Pin ① of IC001 is "L" (less than 1Vdc).
- 7) Change the input signal to 5.4MHz, 300mVp-p sine wave.
- 8) Confirm that the level at Pin ① of IC001 is "H" (more than 3Vdc).

### 7-8-5. Fsc Adjustment (MB-40 Board)

Mode	FWD play
Signal	REF 5A/5B/5C/5E/5F
Measurement point	Pin ① of CN002
Measurement instrument	Frequency counter
Adjusting element	CV101
Specified value	3579545±5Hz

**Note:** Connect the frequency counter through a buffer amplifier (Oscilloscope, etc.) of high input impedance (1MΩ or more) and low capacity (10pF or less).

#### [Adjustment procedure]

- 1) Set the unit into FWD play mode.
- 2) Adjust for 3579545±5Hz with CV101.

### 7-8-6. Video Out Level Adjustment (MB-40 Board)

Mode	FWD play
Signal	REF 5A/5B/5C/5E/5F, Chapter 2 (color bar)
Measurement point	Pin ① of CN101
Measurement instrument	Oscilloscope
Adjusting element	RV002
Specified value	$1.00 \pm 0.05V_{p-p}$

#### [Adjustment procedure]

- 1) Perform searching of chapter 2. (Press **REPEAT** **MODE** **2** **ENTER** **10** **ENTER** of remote control unit.)
- 2) Set the unit into FWD play mode.
- 3) Adjust for  $1.00 \pm 0.05V_{p-p}$  with RV002.

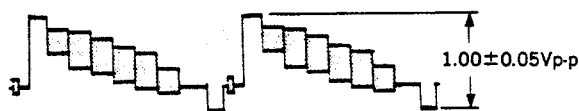


Fig. 7-19.

### 7-8-7. TBC Center Adjustment (VP-21 Board)

Mode	FWD play
Signal	REF 5A/5B/5C/5E/5F, Chapter 2 (color bar)
Measurement point	CH1 : TP101 CH2 : TP102
Measurement instrument	Oscilloscope
Adjusting element	RV104
Specified value	$\Delta t = 6.5 \pm 0.5\mu S$

#### [Adjustment procedure]

- 1) Connect Pin ③ of IC103 to base of Q105 using a jumper wire.
- 2) Perform searching of chapter 2. (Press **REPEAT** **MODE** **2** **ENTER** **2** **ENTER** of remote control unit.)
- 3) Set the unit into FWD play mode.
- 4) Adjust with RV104 so that the  $\Delta t$  value becomes  $6.5 \pm 0.5\mu S$ .
- 5) Remove the jumper wire.

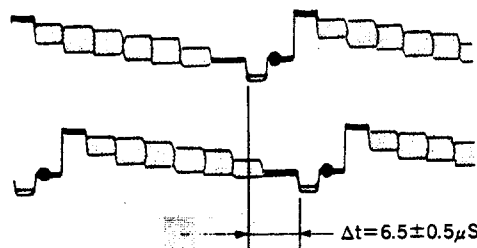


Fig. 7-20.

### 7-8-8. TBC CCD Bias Adjustment (VP-21 Board)

Mode	Still
Signal	REF 5A/5B/5C/5E/5F, frame 15001 (color bar)
Measurement point	TP102 (Emitter of Q102)
Measurement instrument	Oscilloscope (DC range)
Adjusting element	RV101
Specified value	$2.1 \pm 0.05V_{dc}$

#### [Adjustment procedure]

- 1) Perform searching of frame 15001. (Press **SEARCH** **1** **5** **0** **0** **1** **ENTER** of remote control unit.)
- 2) Adjust for  $2.1 \pm 0.05V_{dc}$  with RV101.

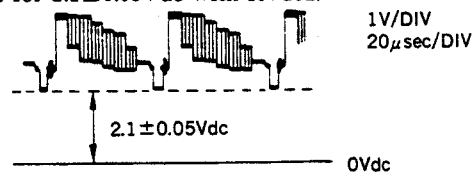


Fig. 7-21.



### 7-8-9. TBC' ED HD Adjustment (VP-21 Board)

Mode	FWD play
Signal	REF 5A/5B/5C/5E/5F, color bar portion (frame 15001 to 16200)
Measurement point	Pin ④ of CN004 (Pin ⑤ of IC102)
Measurement instrument	Oscilloscope
Adjusting element	RV103
Specified value	$5.3 \pm 0.2 \mu\text{S}$

#### [Adjustment procedure]

- 1) Adjust with RV103 so that width of output pulse become  $5.3 \pm 0.2 \mu\text{S}$ .

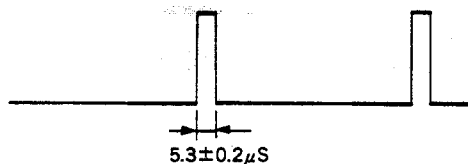


Fig. 7-22.

### 7-8-10. TBC' ED Video Out Level Adjustment (VP-21 Board)

Mode	FWD play
Signal	REF 5A/5B/5C/5E/5F, color bar portion (frame 15001 to 16200)
Measurement point	Pin ① of CN003
Measurement instrument	Oscilloscope
Adjusting element	RV105
Specified value	$0.4 \pm 0.05 \text{V}_{\text{p-p}}$

#### [Adjustment procedure]

- 1) Adjust for  $0.4 \pm 0.05 \text{V}_{\text{p-p}}$  with RV105.

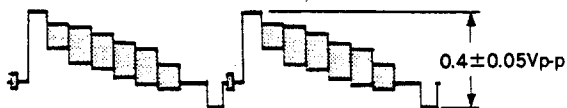


Fig. 7-23.

### 7-9. AUDIO SYSTEM ADJUSTMENT

#### 7-9-1. Audio Output Level Adjustment (AU-80 Board)

Mode	FWD play
Signal	REF 5A/5B/5C/5E/5F, Chapter 6 (1kHz, 100%)
Measurement point	1/L [2/R] terminal of audio line output
Measurement instrument	Audio level meter or oscilloscope
Adjusting element	RV202 [RV201]
Specified value	Audio level meter : $-1.5 \pm 0.3 \text{dBs}$ Oscilloscope : $1.8 \pm 0.1 \text{V}_{\text{p-p}}$

**Note :** Adjusting element for 2/R CH.

#### [Adjustment procedure]

- 1) Search chapter 6, (Press **REPEAT** **6** **ENTER** **9** **ENTER** of remote control unit.)
- 2) Adjust RV202 [RV201] for  $-1.5 \pm 0.3 \text{dBs}$  or  $1.8 \pm 0.1 \text{V}_{\text{p-p}}$ .

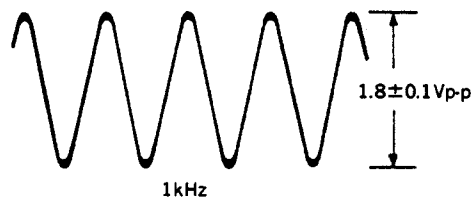


Fig. 7-24.

