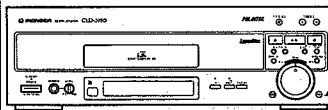


# Service Manual

**PIONEER®**  
The Art of Entertainment



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**RRV1153**

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CD CDV LD PLAYER

# CLD-2950

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model	Power Requirement	Remarks
	CLD-2950		
WB	○	AC220—240V	
WEZ	○	AC220—240V	

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# CHAPTER 1

## 1.1 SAFETY INFORMATION

(FOR EUROPEAN MODEL ONLY)

**VARO!**

AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.



LASER  
Kuva 1  
Lasersäteilyn  
varoituserkki

**WARNING!**

DEVICE INCLUDES LASER DIODE WHICH EMITS INVISIBLE INFRARED RADIATION WHICH IS DANGEROUS TO EYES. THERE IS A WARNING SIGN ACCORDING TO PICTURE 1 INSIDE THE DEVICE CLOSE TO THE LASER DIODE.



LASER  
Picture 1  
Warning sign for  
laser radiation

**ADVERSEL:**

USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION UNDGÅ UDSÆTTELSE FOR STRÅLING.

**VARNING!**

OSYNLIG LASERSTRÅLNING NÅR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN.

**IMPORTANT**

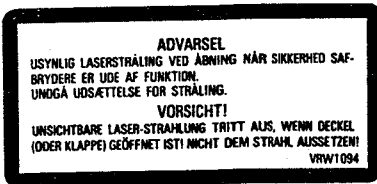
THIS PIONEER APPARATUS CONTAINS LASER OF CLASS 1. SERVICING OPERATION OF THE APPARATUS SHOULD BE DONE BY A SPECIALLY INSTRUCTED PERSON.

**LASER DIODE CHARACTERISTICS**

MAXIMUM OUTPUT POWER: 5 mw  
WAVELENGTH: 780-785 nm

### LABEL CHECK

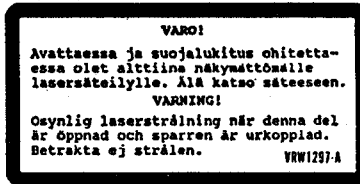
**WEZ model**



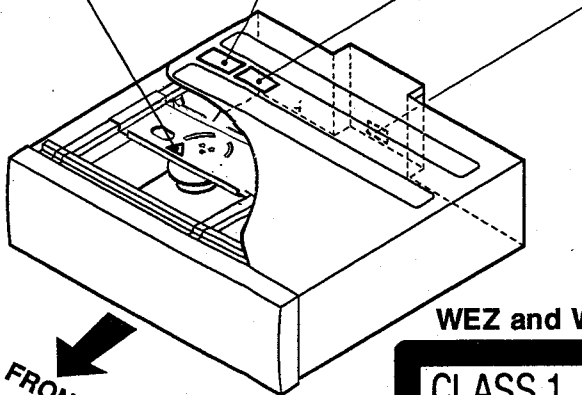
**WB model**



**WEZ model**



**WEZ and WB models**



**WEZ and WB models**

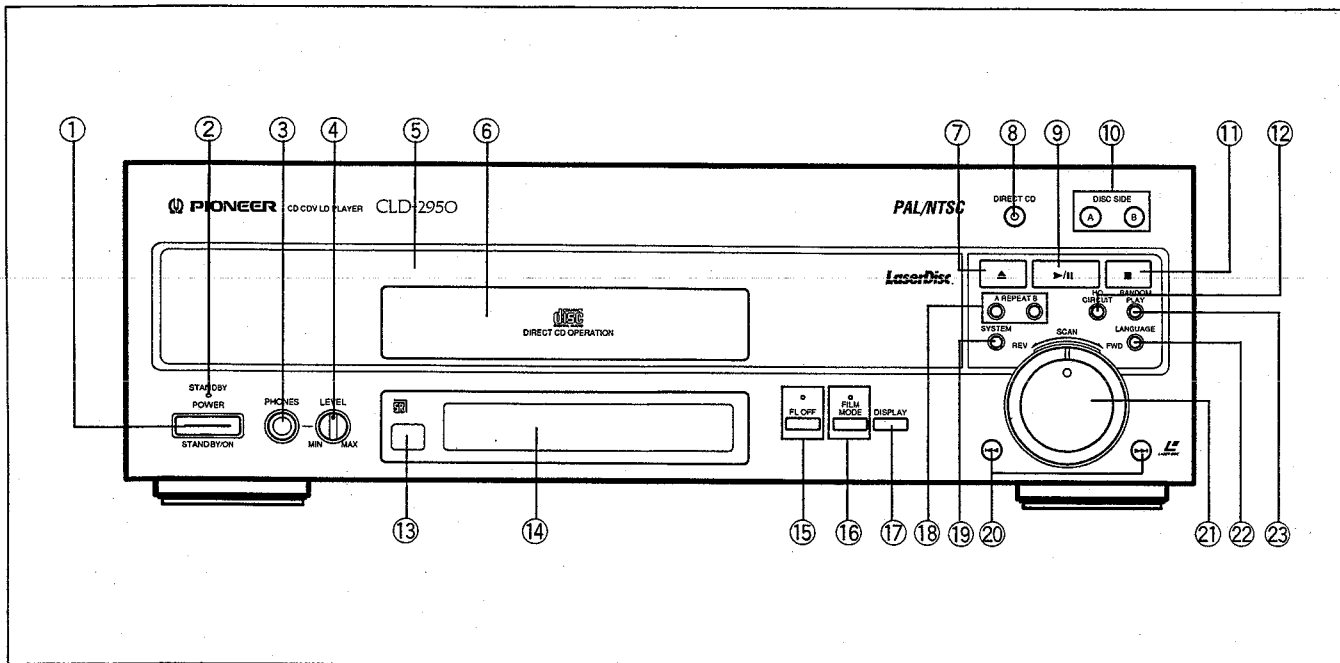


**Additional Laser Caution**

1. The ON/OFF statuses of the side-A/B detection switch (TURN switch on the MECHANISM assembly), slider-position detection switches (PARK 1, 2 and 3 on the MECHANISM assembly) and loading-status detection switches (SW 1, 2 and 3 on LOSB assembly) are detected by the microprocessor (IC101 in the MAIN assembly). To permit the laser diode to oscillate, it is required to set the side-A/B detection switch for side A (IC101 in the MAIN assembly, pin 44 XTURN A=L and pin 43 XTURN B=H) or the slider-position detection switch for the LD ACTIVE status (PARK 1:OFF, PARK 2: OFF, PARK3:OFF), and to set the loading-status detection switch for tilt neutral state (SW1: ON, SW2: OFF, SW3: ON). As long as these requirements are not satisfied, the laser diode will not oscillate. When the requirements are met in any way, the laser diode can oscillate. The laser diode oscillation will continue if pin 13 of IC801 is shorted to GND or the emitter and collector of Q834 are shorted each other (fault condition) in MAIN assembly. In the test mode \*, the laser diode oscillates when the microprocessor detects a PLAY signal, or when the PLAY key is pressed (S104 ON in the FLKY assembly), with the above requirements satisfied.
2. When the cover is open, close viewing through the objective lens with the naked eye will cause exposure to a Class 1 laser beam.

\* Refer to page 1-14

## 1.2 PANEL FACILITIES



① **POWER STANDBY/ON switch**  
Press to turn the power on and off.

② **STANDBY indicator**

③ **PHONES jack**

④ **PHONES LEVEL control**

Turn this control in the "MAX" direction to increase the output level from the PHONES jack. Turn this control in the "MIN" direction to decrease the output level from the PHONES jack.

⑤ **Disc table**

⑥ **CD disc table**

⑦ **Open/close (▲) button**

⑧ **DIRECT CD button/indicator**

⑨ **Play/pause button (▶/||)**

⑩ **DISC SIDE A/B buttons**

⑪ **Stop button (■)**

⑫ **HQ CIRCUIT button**

⑬ **Remote sensor**

⑭ **Display window**

⑮ **FL OFF button/indicator**

⑯ **FILM MODE button/indicator**

⑰ **DISPLAY button**

⑱ **REPEAT A/B buttons**

⑲ **SYSTEM button**

⑳ **Skip buttons (◀◀, ▶▶)**

㉑ **SCAN control**

㉒ **LANGUAGE button**

㉓ **RANDOM PLAY button**



**7. Functions**

Remote control unit operations (CU-CLD097)

	Function	Active play Disc (CAV)	Long play Disc (CLV)	Compact Disc with Video	Compact Disc
Basic Functions	Two-side play	YES	YES	NO	NO
	Single-side play	YES	YES	YES	YES
	Pause	YES	YES	YES	YES
	Stop	YES	YES	YES	YES
Search	Fast forward (forward and reverse)	YES	YES	YES	YES
	Chapter/Track skip	YES	YES	YES	YES
	Direct chapter/Track number search	YES	YES	YES	YES
	Frame number search	YES	NO	NO	NO
	Time number search	NO	YES	YES	YES
	Absolute time search	NO	NO	NO	YES
Program	Chapter/Track program play	YES	YES	YES	YES
	Program correction	YES	YES	YES	YES
Repeat	Repeat between 2 points	YES	YES	YES	YES
	Memory repeat	YES	YES	YES	YES
	Chapter/Track repeat	YES	YES	YES	YES
	One-side repeat	YES	YES	YES	YES
	All-side repeat	YES	YES	NO	NO
	Program repeat	YES	YES	YES	YES
	Random repeat	YES*1	YES*1	YES	YES
Program random repeat	YES	YES	YES	YES	
Trick play	Still/Step	YES	NO	NO	NO
	Multi-speed (Forward/reverse 9-level variable)	YES	NO	NO	NO
Time display	Elapsed time display	NO	YES	YES	YES
	Absolute time display	YES*1	NO	NO	YES
	Remaining track time display	NO	NO	YES	YES
	Remaining total time display	YES*1	YES*1	YES	YES
	Total number of selections, total time display	YES*1	YES*1	YES	YES
Others	Compu program/Auto program edit	YES*1	YES*1	YES	YES
	Hi-Lite scan	NO	NO	YES*4	YES
	Intro scan	YES	YES	YES*5	NO
	Digital level control	YES*3	YES*3	YES	YES
	CX system ON/OFF	YES*2	YES*2	NO	NO
	Audio channel selection (Stereo, 1/L, 2/R)	YES	YES	YES	YES

\*1 Only discs with TOC

\*2 Valid for analog audio playing a disc with the  mark.

\*3 Can only be used with discs with digital audio tracks.

\*4 Audio part only

\*5 Video part only

**NOTE:**

The specifications and design of this product are subject to change without notice, due to improvements.

**PLAYER FUNCTIONS**

- Display, Visual Calendar Display
- Intro Scan, Hi-Lite Scan, Direct CD, Digital Level Control, Random Playback, Program Random Playback and Compu Program/Auto Program Edit
- Digital Audio for LaserVision Discs
- Last Memory

## 1.4 IC INFORMATION

### ■ PD3273A (FLKY ASSY IC100)

#### ● Mode control IC

#### ● Pin function

No.	Pin name	I/O	Function
1	VCC	I	+5V
2	P90	O	NC (OPEN)
3	xS-CLOCK	I/O	Serial communication clock (Mechanism control, Chara. Gen.)
4	S-MTOF	I	Serial communication data input (Mechanism control)
5	S-FTOM	O	Serial communication data output (Mechanism control, Chara. Gen.)
6	xRESET OUT	O	Mother board reset output
7	xCS	O	Chara. Gen. (PD0175A) CS output (L:enable)
8	SYNC IN	I	CD deck synchro input
9	SYNC OUT	O	CD deck synchro output
10	AVCC	I	+5V
11	AN0		
12	AN1		
13	KIN0	I	Key data input
14	KIN1		
15	KIN2		
16	KIN3		
17	KIN4		
18	P07	I	GND
19	AVSS		
20	TEST		
21	X2	O	NC (OPEN)
22	X1	I	+5V
23	VSS	I	GND
24	OSC1	I	Main system clock oscillation (8MHz)
25	OSC2	O	
26	xRESET IN	I	CPU Reset (L : reset)
27	SHAKE	I	Mechanism control communication request
28	SEL IR	I	Remote control input
29	POWER ON	O	Mother board power supply switching output
30	LED (THEATER)	O	LED output : theater indication
31	P16	I	GND
32	P47	O	NC (OPEN)
33	LED (FL-OFF)	O	LED output : FL OFF indication
34	LED (DRCTCD)	O	LED output : Direct CD indication
35	P44	O	NC (OPEN)

● The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

No.	Pin name	I/O	Function		
36	SHTLSCAN	O	Shuttle scan output		
37	SEG K	O	Display segment output		
38	SEG J				
39	SEG I				
40	KSCAN0/SEG H	O	Key scan output/Display segment output		
41	KSCAN1/SEG G				
42	KSCAN2/SEG F				
43	KSCAN3/SEG E				
44	SEG D				
45	SEG C				
46	SEG B				
47	SEG A	O	Display digit output		
48	VDISP			I	-27V
49	P60			O	NC (OPEN)
50	P61				
51	G10			O	Display digit output
52	G9				
53	G8				
54	G7				
55	G6				
56	G5				
57	G4				
58	G3				
59	G2				
60	G1				
61	LED (STNBY)	O	LED output : Standby indication		
62	MODEL	I	Switching of domestic/overseas models		
63	DOGFOOD	O	Pulse output for watchdog timer		
64	P77	O	NC (OPEN)		

## ■ PD0194A (MAIN ASSY IC101)

### ● Mechanism control IC

#### ● Pin function

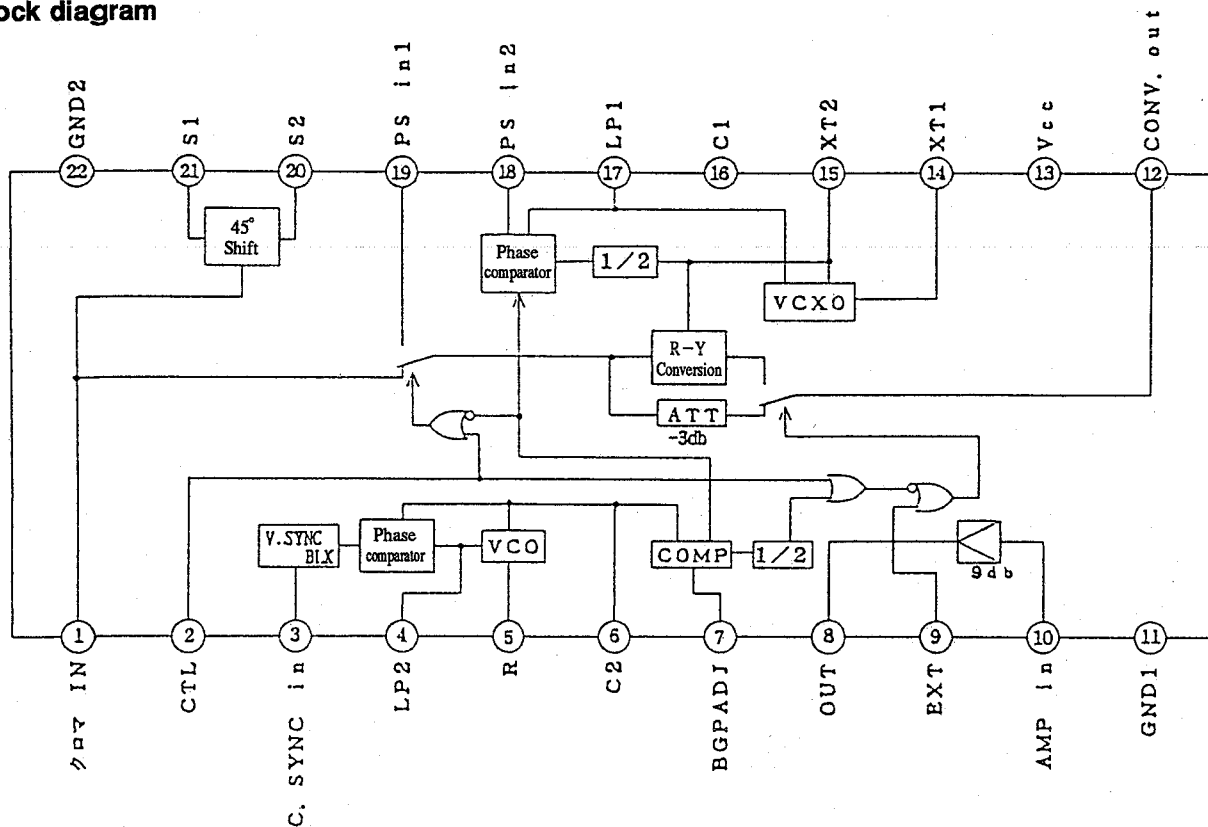
No.	Pin name	I/O	Function
1	VCC	I	Power connection pin Impresses 5V±10%.
2	XCD	O	LD/CD switching signal output pin. "L" = CD "H" = LD
3	RFCORR	O	RF collection switch signal output pin. "H" = gain up CD,CDV-A:Low Raise the gain with the CAV inner circuit, otherwise High.
4	GPWM	O	Duty pulse signal output terminal for spindle gain switching. CLV inner circuit : L Outer circuit : H
5	FBAL	O	Focus balance control H: TEMAX L: RFMAX
6	SLDERR	I A/D	Carries out A/D conversion of this signal and controlled input of the slider servo. Control the slider motor so that this signal becomes 2.5V.
7	SLDPOS	I A/D	Pick up position detection switch input pin. Divides the resistance of each switch and detects the reading position of the A/D input value.
8	TBALERR	I A/D	Tracking balance error signal input pin. Carries out A/D conversion of this signal and controlled input of the tracking offset.
9	TILTERR	I A/D	Carries out A/D conversion of this signal and controlled input of the tilt servo. Control the tilt motor so that this signal becomes 2.5V.
10	XFOK	I	Focus servo lock signal input pin. "L" = lock "H" = unlock Used for detecting focus servo locking.
11	FSEQ	I	Sub-code sync conformity detection signal input pin. "L" = Others "H" = Conformity
12	TBALDRV	O PWM	Carries out PWM output of the tracking offset, and is used for auto tracking offset. 910µsec cycles, 3 value control H, L, Z.
13	TLATCH	O	DAC & digital filter PD2026 serial control latch signal output terminal. Startup is latched.
14	TILTDRV	I/O	Load/tilt control output pin. 0, 5V - tray IN, OUT/tilt DOWN, UP 2.5V - STOP Carries out PWM output of the tilt drive, and is used for the tilt servo.
15	SQOUT	I	DSP reading command data input pin. SUBQ is read out.
16	COIN	O	DSP writing command data output pin.
17	CQCK	O	DSP reading/writing command clock output pin. Start-up reading.
18	SLD DRV	O PWM	Slider control signal output pin. 5V = FWD, 0V = REV, 2.5V = STOP 910µsec cycles, 3 value control H, L, Z.
19	SI1	I	Input pin for data from mode control IC.
20	SO1	O	Serial data output to mode control IC.
21	SCK1	I/O	Clock for serial communication with mode control IC. Is set to input mode at all times when not used for communication with the mode control IC.
22	TZC	I INT	Tracking error zero cross signal input pin. At the time of mix lamp detection, this signal is monitored during track count search.
23	WRQ	I	Sub-code Q reading OK signal input pin. "L" = NG "H" = OK This terminal becomes H when the sub-code Q data passes the CRC check.
24	RWC	O	DSP reading/writing command signal output pin. "L" = READ "H" = WRITE
25	SHAKE	I/O	Handshake signal pin for data communication with mode control IC. This terminal is used as a data line for both directions, and each microcomputer carries out input/output control.
26	XPBV	I	LD/CDV play vertical synchronous signal input pin. "L" = vertical synchronous
27	CNVss	I	GND grounding for A/D conversion.
28	XRESET	I	Reset signal input pin. "L" = reset "H" = reset cancel Controlled by mode control IC.
29	XIN	I	9MHz clock oscillation input pin.
30	XOUT	O	9MHz clock oscillation output pin.
31	N. C.	O	Not used. Since it is for only $\phi$ output, it cannot be used for anything else.
32	GND	I	GND grounding.
33	SW1	I	Switch input pin for loading/tilt position detection.

No.	Pin name	I/O	Function
34	SW2	I	Switch input pin for loading/tilt position detection.
35	SW3	I	Switch input pin for loading/tilt position detection.
36	XSLOCK	I	Spindle lock signal input pin. "H" = unlock "L" = lock
37	FG	I	Spindle motor FG signal input pin 24 outputs per rotation. Used after dividing by 3 in microcomputer.
38	DATA	I	Input pin for Phillips code decoder with built in mechanism controller.
39	PBH	I	Play H-SYNC input for Phillips code decoder.
40	XPBV	I	Play V-SYNC input for Phillips code decoder.
41	16:9	O	16:9 switching signal output pin. 16:9 "H" 4:3 (normal) "L"
42	VLOCK	I	Vertical synchronous lock detection signal input pin. "L" = phase is not correct "H" = phase is correct.
43	XTURNB	I	Switch input terminal for turn mechanism R Plate position detection. L : B-side H : A-side, Others
44	XTURNA	I	Switch input terminal for turn mechanism R Plate position detection. L : A-side H : B-side, Others
45	XPAL	O	PAL/NTSC signal output pin. L : PAL, H : NTSC
46	XPLAY	O	PLAY signal output terminal for PAL. L : PLAY H : NOT PLAY
47	JF/R	I/O	JUMP FWD signal output terminal for PAL. FWD jump : H REV jump : L Others : Z
48	SCK3	O	Serial 3 clock signal output pin.
49	XLATCH3	O	Serial 3 latch signal output pin for TBC.
50	SO3	O	Serial 3 data signal output pin. The serial signal is a common one, and the signals are distinguished with latch signals (XLAT3, TLAT).
51	DIRECT	O	CD direct video line power off signal output pin. Video PWOFF: H normal: L
52	XCLV	O	CAV/CLV switching signal output pin. "H" = CAV, "L" = CLV
53	VSQ	O	Switching signal output terminal for the video signal. H : squelch ON L : squelch OFF
54	SENA	O	Shift enable signal output terminal. H : H is picked and REFV is made closer to PBV. L : Normal
55	CLRSCN	O	Clear scan signal output terminal. H : During clear scanning. L : Others
56	T HOLD	I	Track jump accelerating/decelerating signal input pin. "H" = accelerating/decelerating "L" = Others
57	HQON	O	High quality circuit control signal output terminal. H : HQ circuit ON. L : HQ circuit OFF.
58	AMPDET	I	Spindle overcurrent detection signal input pin. "L" = overcurrent "H" = normal
59	SQ1	O	Analog sound switching signal output pin. 1/L "L" = squelch OFF "H" = squelch ON
60	SQ2	O	Analog sound switching signal output pin. 2/R "L" = squelch OFF "H" = squelch ON
61	XCX	O	Analog sound CX noise reduction switching signal output pin. "L" = CX ON "H" = CX OFF
62	MUTE	O	Audio line sound mute control signal output pin. "H" = MUTE "L" = MUTE CANCEL
63	ACCONT	I/O	Output terminal for signal increasing/reducing the spindle speed. H : Accelerator L : Brake Z : Others
64	XANA	O	Digital/analog audio switch signal output pin. "H" = digital "L" = analog



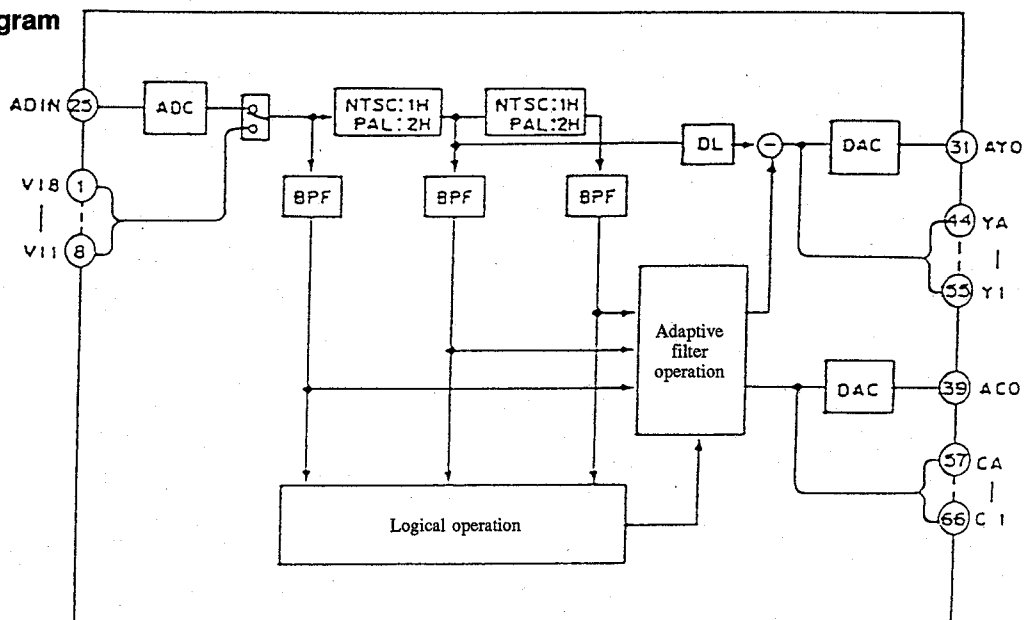
■ MM1130XD (PALB ASSY IC304)  
● Chroma signal processing IC

● Block diagram



■ CXD2024Q (YCNR ASSY IC801)  
● 3 Line D-COMB filter

● Block diagram



● Pin function (CXD2024Q)

No.	Pin name	I/O	Function
1	VI8	I	Digital input (MSB). When not using, connect to DV <sub>SS</sub> or DV <sub>DD</sub> .
2	VI7	I	Digital input When not using, connect to DV <sub>SS</sub> or DV <sub>DD</sub> .
3	VI6		
4	VI5		
5	VI4		
6	VI3		
7	VI2		
8	VII	I	Digital input (LSB). When not using, connect to DV <sub>SS</sub> or DV <sub>DD</sub> .
9	ADCO	I	H : Output the video signal obtained from the AD converter (input pin ADIN) as it is through the Y output terminals (YA—Y3) as 8-bit digital data with the 3.5 clock delay. L : Becomes normal mode.
10	INSL	I	Input switching. Switches the comb filter. H : Digital input L : Analog input
11	OCLK	I	Clock amplifier input. Cut the DC with the condenser when the level becomes higher than 0.8V <sub>p-p</sub> and then input.
12	DV <sub>SS</sub>	—	Digital ground
13	DV <sub>DD</sub>	—	Digital Power supply (5V)
14	CLKO	O	Clock amplifier output
15	MCK	I	Clock input. Input the 4fsc clock that has been locked to the color burst. Normally, the ④pin clock amplifier is connected.
16	ADCK	I	Clock input for the AD converter. Input the same clock as for the clock input MCK. Normally, the ④pin clock amplifier is connected.
17	CLPI	I	Clamp pulse input for the AD converter. Clamps the signal voltage of the low area of the clamp pulse. When the clamp function is OFF, connect to DV <sub>DD</sub> .
18	XCPON	I	H : The clamp function is turned OFF and only the normal AD converter function is active. L : The clamp function operates.
19	ADVS	—	Digital ground for the AD converter
20	ICP	I	Voltage integrated terminal for clamp control. Connect a condenser of 0.01μF. (When not using the clamp, connect to the ground.)
21	CRV	I	Clamp standard voltage input. Operates to make the standard voltage and clamp area input voltage the same. (When not using the clamp, connect to the ground.)
22	RB	O	Standard voltage (Bottom), Standard value (0.5V)
23	GR	—	Guard ring (connect to the analog ground.)
24	AAVS	—	Analog ground for the AD converter
25	ADIN	I	Comb filter analog input (AD converter input)
26	AAVD	—	Analog power supply for the AD converter (5V)
27	RT	O	Standard voltage (Top), Standard value (2.6V)
28	ADVD	—	Digital power supply for the AD converter (5V)
29	YV <sub>DD</sub>	—	Power supply for the Y/AD converter (5V)
30	XAYO	O	AYO reverse electric current output terminal (Connect to the analog ground YV <sub>SS</sub> .)
31	AYO	O	Analog brightness signal output (By connecting a resistor, the output can be obtained.)
32	YVG	O	Connect a condenser of 0.1μF.
33	YVRF	I	Sets the full scale value of the analog brightness signal.
34	YIRF	O	Connect the "16R" resistor which is 16 times for the "R" output resistor of the AYO terminal.
35	YV <sub>SS</sub>	—	Analog ground for the Y/AD converter.
36	VB	O	Connect a condenser of 0.1μF.
37	CV <sub>DD</sub>	—	Analog power supply for the C/AD converter (5V).
38	XACO	O	ACO reverse electric current output terminal (Connect to analog ground CV <sub>SS</sub> .)
39	ACO	O	Analog chroma signal output (By connecting a resistor, the output can be obtained.)

No.	Pin name	I/O	Function
40	CVG	O	Connect a condenser of 0.1 $\mu$ F.
41	CVRF	I	Set the full scale value of the analog chroma signal.
42	CIRF	O	Connect the "16R" resistor which is 16 times for the "R" output resistor of the ACO terminal.
43	CV <sub>ss</sub>	—	Ground for the C/DA converter
44	YA	O	Digital brightness signal output (MSB)
45	Y9	O	Digital brightness signal output
46	Y8		
47	Y7		
48	Y6		
49	Y5		
50	Y4		
51	Y3		
52	DV <sub>ss</sub>	—	Digital ground
53	DV <sub>DD</sub>	—	Digital power supply (5V)
54	Y2	O	Digital brightness signal output
55	Y1	O	Digital brightness signal output (LSB)
56	XYOE	I	Digital brightness signal output control H : High impedance L : Enable
57	CA	O	Digital chroma signal output (MSB)
58	C9	O	Digital chroma signal output
59	C8		
60	C7		
61	C6		
62	C5		
63	C4		
64	C3		
65	C2		
66	C1	O	Digital chroma signal output (LSB)
67	XCOE	I	Digital chroma signal output control H : High impedance L : Enable
68	APCN	I	Aperture correction H : Corrects F characteristic deterioration caused by aperture effects. Even in the through mode (TST ON) aperture correction is applied to the Y output. L : Standard mode
69	RATI	I	H : PAL L : NTSC
70	NTPL	I	H : PAL L : NTSC
71	TST	I	Y output through mode H : Outputs an composite video input signal from the Y output. At this time, there is a 1H (for NTSC and PAL it is 2H) + 18 clock delay from the input (at digital input). A Y/C separated C signal is output from the C output. L : Y/C separation mode
72	DV <sub>ss</sub>	—	Digital ground
73	DV <sub>DD</sub>	—	Digital power supply (5V)
74	NPL	I	H : PAL L : NTSC
75	TEST	I	Test terminal: Make sure to fix "L".
76	TEST		
77	TEST		
78	TEST		
79	BPF	I	H : Fix to BPF separation. L : Standard mode
80	TEST	I	Test terminal: Make sure to fix "L".

## 1.5 ERROR CODE TABLE

### 1) RAM DSP Functions

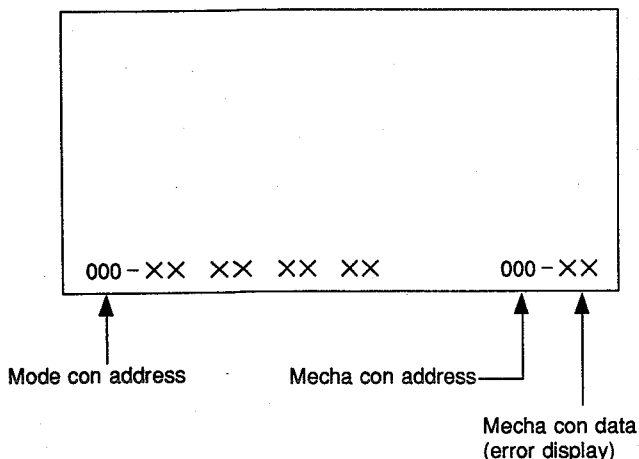
The interior RAM contents of the Mode Control Microcomputer (hereafter: mode con) and the Mechacontrol Microcomputer (hereafter: mecha con) can be output on a TV screen and error content can be determined. (RAM DSP function)

### 2) Starting RAM DSP Function

The screen shown below appears if the **ESC** and **DISPLAY** keys on the test mode remote control (GGF1067) are pressed in order.

Contents of mode con are displayed in 4byte units and contents of mecha con are displayed in 1byte units. In this condition, 1 is added to the display address if the TV/LDP key is pressed and 1 is subtracted if the CX key is pressed. Also, the mode con/mecha con address control switching is toggle displayed with the **DISPLAY** key.

Initial setting is set to 14C by pressing 3-digit display of mecha con address with **TV/LDP** key (or **CX** key). By doing so, error code appears as 2-digit mecha con data.



Explanation of information when analyzing the causes of CLD player errors.

Error	Contents	Conditions	Following Processes
00	no error	This is normal condition	
E0	undefined		
E1	undefined		
E2	undefined		
E3	undefined		
E4	spindle overcurrent detection error	When overcurrent to spindle motor is detected in play. When monitor starts and overcurrent port is "L" for 4 seconds after spindle of play or special play is slower than play for 5 seconds.	Spindle stops in free run. Play cannot be done. No recovery as long as set is not unplugged.
E5	FG abnormality error	① When frequency (5 seconds from spindle run) measured from FG is below 15 rpm when LD is started. ② When there is no 1/8 revolution even after 5 seconds have passed from acceleration finish when CD is started. ③ When frequency measured from FG is below 15 rpm even though CD: subcode/LD: Phillips code is readable or spindle is locked during play/search. In other cases, it is assumed that the above conditions appear in the FG sensor and an accurate frequency cannot be measured.	Spindle stops in free run. Free run is 90 sec. for LD and 15 sec. for CD/CDV. Play cannot be done after that. No recovery as long as set is not unplugged.
E6	partial short error	① When 1200 rpm cannot be reached even after a specific time (8 sec.) passes from spindle run when LD is started. ② When a specific frequency (416 rpm) cannot be reached even after 6 seconds pass from spindle acceleration finish when CD is started.	Spindle stops in free run. Normal operation resumes after that.
E7	undefined		
E8	undefined		
E9	undefined		
EA	undefined		
EB	undefined		
EC	undefined		
ED	undefined		

Error	Contents	Conditions	Following Processes
EE	undefined		
EF	undefined		
F0	undefined		
F1	picture stop detection	When Phillips code is decoded and picture stop is read.	Still (still at mecha con detection)
F2	undefined		
F3	segment play finish	When a designated address is reached.	Still or pause
F4	no TOC	When it is determined by sub code that there is no video TOC after lead address is read by LD.	Function or control of indication is carried out.
F5	tray push	When tray is pushed when in open position.	Target goes to TOC lead
F6	no PH code	When Phillips code cannot be read when LD is started even if slider is moved FWD or REV slowly for 5 seconds.	Search, special play, and function are not carried out. When starting, play is carried out without initial search.
	PRD	When program area sub done can be read, but TOC section subcode cannot be read when CD is started.	Treated as CD-R segment recording disc. After initial search, only play is possible. Scanning and search are not possible.
F7	laser active error	When play inhibit or professional use is read from user's code and data track is read from sub code by LD, laser active disc is determined and play is suppressed.	Indicates "LD-ROM" on screen and stops. Play cannot be carried out unless disc is opened.
F8	loading error	① When loading operation goes over time (approx. 10 sec.). ② When assist at disc sense entry ends and is not tilt neutral. ③ When assist at set up entry ends and is not tilt neutral.	Reverses in loading direction once. Even then, if the time limit has been passed, loading is stopped.
F9	slider error	When slide assist goes over time (track count search 20 sec. forced movement 10 sec.).	Power is on, but slider does not move at all. In this situation, push power key to immediately turn power off.
FA	misclamp error	① When NG results from misclamp during set up. (Track loss often) ② When focus is not clear at time of spindle lock waiting. ③ When the spindle is stopped once before CDV A←→V area change, but stop is not carried out within 1.6 seconds, it is determined that there are two discs on each other and clamp error is set.	Open (stops at B-side)
FB	spindle error	① When spindle is not locked within 60 seconds from spindle run start during set up. ② When CAV/CLV determination is not finished within 60 seconds from spindle lock. ③ When code cannot be read for 10 - 15 continuous seconds with LD or 7 - 10 continuous seconds with CD/CDV. ④ When FG does not enter for 4 seconds and when not in recover mode at time of CD set up. At this time, it is stopped at free run.	Stop
FC	focus error	① When ND at set up entry and FLAG is standing. ② When LD is out of focus when slider is moved to starting position during set up. In case of CD/CDV is NG even after three focus tries.	Open (stops at B-side)
FD	search error	① At search entry, LD is in sub code search or CD/CDV is in Phillips code search. ② When search does not end in determined time (CLV with TOC: 30 sec. others: 15 sec.) ③ In recover mode, spindle is locked, code is read and RCVCOUNT is 0.	Search is canceled and play carried out.
FE	TOC lead error	When TOC lead does not end within 15 seconds.	LD: no TOC CD: stop
FF	emergency	When recover mode is entered and return is read but cannot be carried out.	Stop

# 1.6 ADJUSTMENTS

## 1.6.1 TEST MODE

### 1) How to start test mode

With the MAIN ASSY test mode TP (W407) dropped to GND, the test mode is started by putting the power switch ON. (Fig. 1)

After confirming that all FL indicators are lit, remove test mode jumper wire and GND connection. Or, with power switch ON, press test mode remote control (GGF1067) ESC key and TEST key in order.

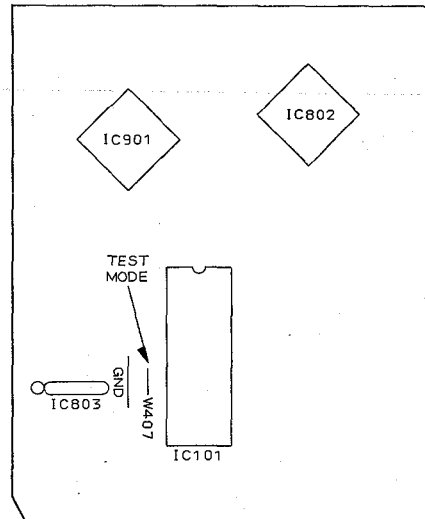
- When entering the test mode, the FL display and the LED will light until an operation is carried out with a key.
- When entering the test mode, the TV system will become that of NTSC.
- During the test mode, the background will be blue if an LD or a CDV is not playing (When NTSC and PAL), or black (in the case of quasi-PAL).
- The TV system is unconditionally toggled between the 3 systems of PAL → NTSC → quasi-PAL.

### 2) How to cancel test mode

Turn power switch OFF. Or, press test mode remote control ESC key.

### 3) Functions and key control when in test mode

Note : For keys not on player or on accompanying remote control, use test mode remote control (GGF1067)



MAIN ASSY

Fig. 1

## • Key operation in the Test mode

Player Status	Key Operation	Function	Remarks
Tray Open	⏪ / ⏩ SKIP (Refer to Note 1)	⏪: Shifts the tray in the closed direction and also raises the turn table while pressing the key. ⏩: Shifts the tray in the open direction and also lowers the turn table while pressing the key.	
Tray Open	▶ PLAY	Clamps	
Clamp	▶ PLAY	Turns the disc through TRK Servo OFF	TRK-OFF
TRK Servo OFF	▶ PLAY	TRK Servo ON	TRK-ON
TRK Servo ON	▶ PLAY	TRK Servo OFF	TRK-OFF
TRK Servo ON	◀       ▶ (STEP)	FOCS balance select	F-0/F-1
TILT Neutral	+ MULTI-SPEED	TILT Servo ON	T-□ : ON
TILT ON	-MULTI-SPEED	TILT Neutral	T-□ : N
TILT Neutral or ON	⏪ / ⏩ SKIP	Setting TILT Servo to OFF, can force TILT to move.	T-1 to T-E
Clamp	⏪ / ⏩ SCAN	Can force the slider to move	S-LD S-CDV S-CD S-IN
Play	⏸ PAUSE	Still	
Play	■ STOP	Stop	
Stop	▲ OPEN	Open	
Play	<div style="text-align: center;">                     +10                      ↓                      0      9                      ↓                      ▶ PLAY                 </div>	Sets to SEARCH Lead Address Input mode. Designates the SEARCH lead address through keys 0 to 9. Press the CLEAR [C] key if the designated address is incorrect. Searches the designated address upon pressing the PLAY key.	

Note 1 : Press SKIP (⏪ / ⏩) Keys after the tray is set to open state by pressing Open (▲) key. Because, in tray open state, pressing PLAY (▶) key causes it to set to clamp state and SKIP (⏪ / ⏩) keys can not function properly.

Table 1

● **Player Operation in the Test Mode (Disc tray is removed)**

Operate the player by selecting a test mode function with the keys on the player or on the remote control unit.

· **CD PLAYBACK**

- ① Place the CD disc on the turn table.

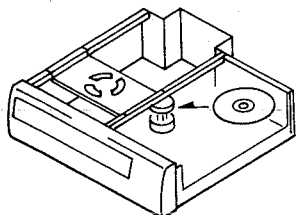


Fig. 2

- ② Press the PLAY (▶) key once.  
(Twin gear starts to move.)
- ③ Push the cam plate (Fig. 3) in the direction of the arrow and wait until the CD disc is clamped.

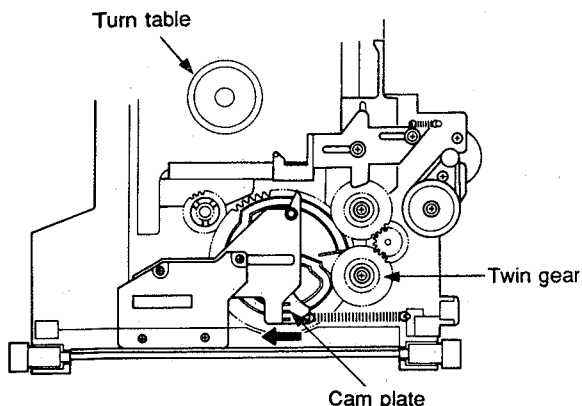
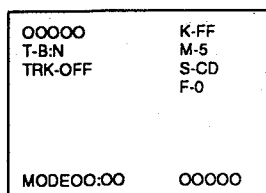


Fig. 3

- ④ Press the ◀◀ or ▶▶ keys to appear "S-CD" on the TV screen display.



TV screen display

Fig. 4

- ⑤ After pressing the PLAY (▶) key once to clamp the disc, press the PLAY (▶) key twice, disc will be normally played.

· **LD PLAYBACK**

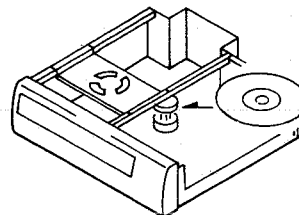
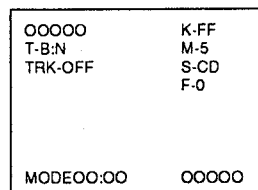


Fig. 5

- ① Press the PLAY (▶) key once.  
(Twin gear starts to move.)
- ② Press the SKIP REV (◀◀) key to raise the turn table (spindle motor section) while pressing the cam plate (Fig. 3) in the direction of the arrow. Raise it to the position where the LD disc can be easily placed on the turn table. If the turn table is raised too high, lower it with the SKIP FWD (▶▶) key.
- ③ Place the LD disc on the turn table and press the PLAY (▶) key once to clamp the disc.
- ④ Press the ◀◀ or ▶▶ keys to appear "S-LD" on the TV screen display.



TV screen display

Fig. 6

- ⑤ After pressing the PLAY (▶) key once to clamp the disc, press the PLAY (▶) key twice, disc will be normally played.

## 1.6.2 ADJUSTMENT PRECAUTIONS

### ● Equipment and jigs needed for adjustment

- CD test disc (STD-901 or STD-902)
- LD test disc (GGV1003 and GGV1007)
- Medium-sized blade screwdriver
- Small blade screwdriver
- Hexagonal wrench (straight type, size: 3mm)
- Resistor ( $10K\Omega \times 2$ ,  $47K\Omega \times 1$ )
- Large Phillips screwdriver
- Medium-sized Phillips screwdriver
- Two-channel oscilloscope (with delay)
- AF oscillator
- Frequency counter
- Digital voltmeter
- TV monitor
- Low pass filter

### ● Preparation for adjustment

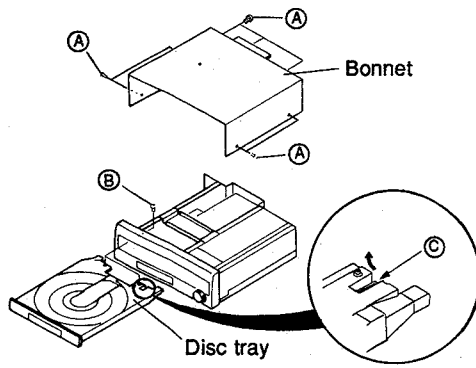


Fig. 1

1. Remove the 7 screws **A** that stabilize the bonnet and take off the bonnet. (Fig. 1)
2. Remove the 2 tray stopper screws **B** and press the OPEN/CLOSE button to put the tray unit in the open position. (Fig. 1)
3. While pushing the hook on the right rear of the disc tray **C** to the left, pull out the tray unit. (Fig. 1)

### ● Disassembly order (When diagnosing the MAIN ASSY)

- ① Remove the tray, open PALB and YCNR assy, and fix it to the holder.
- ② Removes SCRB and AFMB assy.
- ③ Remove VDTB and MAIN assy, and stand MAIN up. Put isolating material on top of the clammer, and then place the VDTB, PALB and YCNR assy on top.

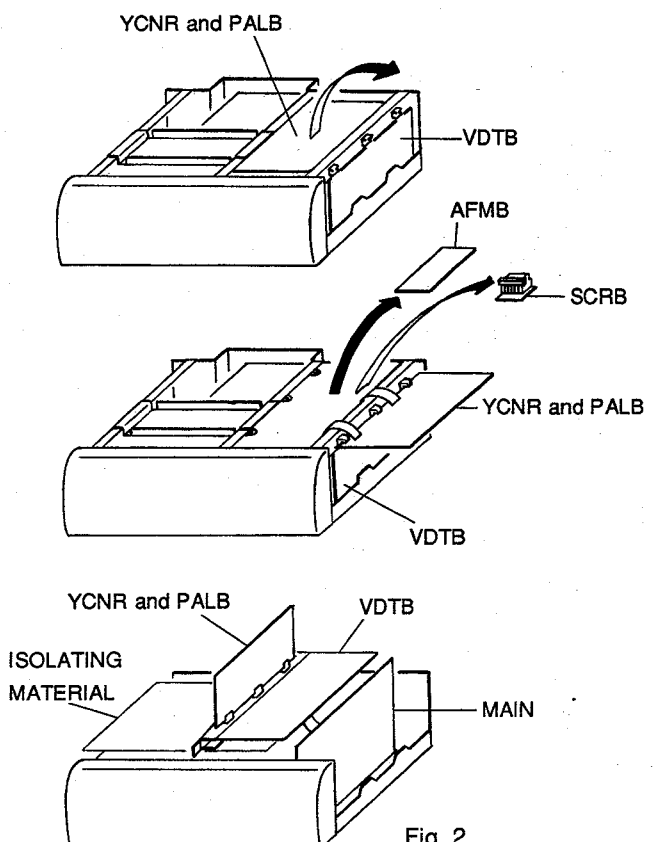


Fig. 2



● Before adjusting mechanism system

Note: Be careful not to turn centering adjustment screw and TAN adjustment screw past their adjustment range.

— Adjustment Range of Centering Adjustment Screw —

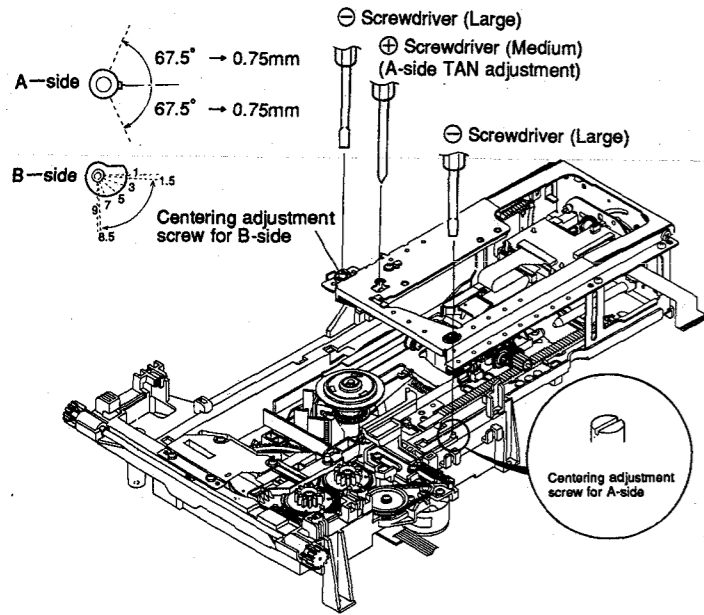


Fig. 3 Mechanism Assy Adjustment

● Notes When Adjusting Centering

For both A-side and B-side, if the amplitude of the error waveform of the disc's innermost and outermost tracks at TRK OFF are about the same, then course adjustment is not necessary.

If waveform S/N is bad and difficult to observe in "2. Coarse centering adjustment for A-Side play" and "6. Fine centering adjustment for A-Side play" use the low pass filter in diagram.

● Rack Assy Position When Adjusting Centering

When moving slider to inner position to adjust the innermost track of disc during centering adjustment, be careful not to keep the mechanism stopper and RACK Assy from bumping each other. (Fig. 5)

● Notes When Adjusting Pickup Assy

Please clean lens first when readjusting the PICKUP Assy that is on this product. Also, when changing PICKUP Assy, change whole CARRIAGE Assy (VWT1100).

— Adjustment Range of TAN Adjustment Screw —

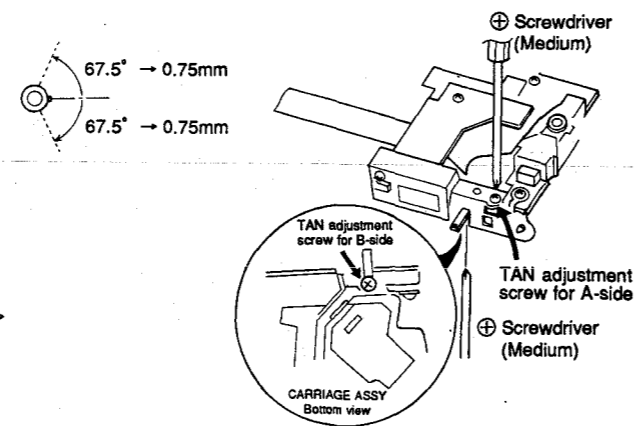


Fig. 4 Carriage Assy Adjustment

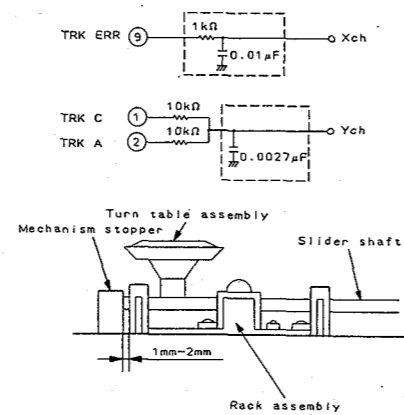


Fig.5

1.6.3 MAIN ASSY, VDTB ASSY, PALB ASSY AND YCNR ASSY ADJUSTMENT LOCATION

● MAIN ASSY

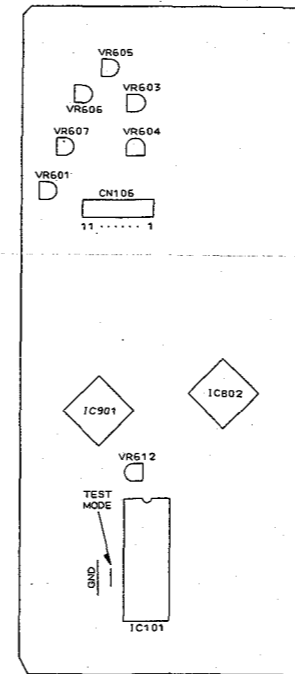


Fig. 1 Adjustment diagram of MAIN ASSY

- VR607 : Tilt offset adjustment
  - VR605 : FCS Balance adjustment (TRK error max)
  - VR606 : FCS Balance adjustment (RF level max)
  - VR604 : FCS Servo loop gain adjustment
  - VR603 : TRK Servo loop gain adjustment
  - VR601 : RF level adjustment
  - VR612 : PLL offset adjustment
- (Order in adjustment)

● VDTB ASSY, PALB ASSY AND YCNR ASSY

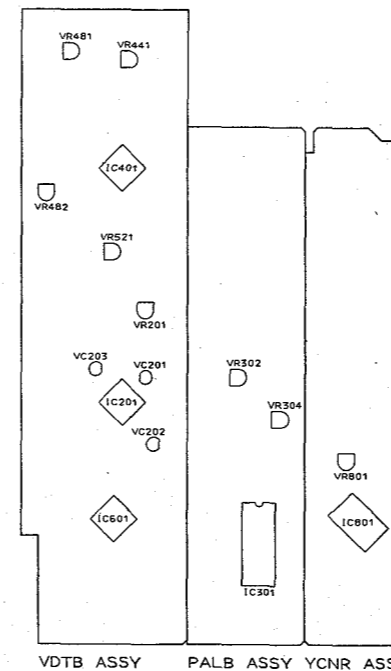


Fig. 2 Adjustment diagram of VDTB ASSY, PALB ASSY AND YCNR ASSY

- VC202 : NTSC Reference clock adjustment
  - VC201 : PAL Reference clock 910fH adjustment
  - VC203 : PAL Reference clock adjustment
  - VR481 : VCO Center frequency adjustment
  - VR482 : Output video level adjustment
  - VR441 : 1H Delay video level adjustment
  - VR521 : VPS Error adjustment
  - VR801 : Y output level adjustment
  - VR304 : MOD Y - Signal level adjustment
  - VR302 : MOD C - Signal level adjustment
  - VR201 : PAL Inverting SC phase adjustment
- (Order in adjustment)

1.6.4 MECHANICAL ADJUSTMENT

NOTE : All VRs and CNs (connectors) in the tables are parts of MAIN ASSY.

Adjustment name	Adjustment point	Measuring equipment and jigs	Measurement point	Player condition	Adjustment procedure	Waveform and connection diagram
1 Tilt offset Check and adjustment	VR607	• TV monitor	Tilt indication on Test mode screen	• Power ON • Test mode • Disc not installed	1. Check if the tilt indication on the test mode screen is at T-6 to T-8. 2. If the tilt indication is not at T-6 to T-8, adjust VR607 until the tilt indication reaches T-6 to T-8.	
2 Coarse centering adjustment for A-side play	Mechanism assembly Centering adjustment screw for A-side play	• Screwdriver (Large) • Oscilloscope • STD-901 or STD-902 • MIX resistor 	CN106 X: ⑨ pin (TRK ERR) Y: ①+② pin (TRK SUM)	• Test mode TRK servo OFF Tilt servo ON • Innermost track of STD-901 or STD-902 which does not come in contact with the mechanical stopper.	Note : Be careful not to turn the centering adjustment screw past its limit. 1. Move the slider until it does not come in contact with the mechanical stopper at the slider position indication S-IN. 2. Observe TRK ERR (Xch) and TRK SUM (Ych) at the X-Y mode during TRK Servo OFF. 3. Adjust centering adjustment screw for A-side until the Lissajous' figure is horizontal.	
3 FCS balance adjustment (1) TRK ERR MAX	VR605	• Oscilloscope • STD-901 or STD-902	CN106 ⑨ pin (TRK ERR)	• Test mode TRK servo OFF Tilt servo ON • Inner track of STD-901 or STD-902	1. Observe TRK ERR at CH1 of the oscilloscope during TRK Servo OFF. 2. Adjust VR605 until the amplitude of the waveform reaches its maximum and the envelope is very clear.	
4 FCS balance adjustment (2) RF LEVEL MAX	VR606	• Oscilloscope • STD-901 or STD-902	CN106 ③ pin (RF)	• Test mode TRK servo ON Tilt servo ON • Inner track of STD-901 or STD-902	1. Observe RF at CH1 of the oscilloscope at TRK Servo ON. 2. Adjust VR606 until the amplitude of the waveform reaches its maximum and the envelope is very clear.	
5 Tangential direction angle adjustment for A-side play	Carriage assembly TAN adjustment screw for A-side play	• Oscilloscope • STD-901 or STD-902 • Screwdriver (Medium)	CN106 ③ pin (RF)	• Test mode TRK servo ON Tilt servo ON • Outermost track of STD-901 or STD-902 (position where TAN screw can be seen)	Note : Be careful not to turn the TAN adjustment screw past its limit. 1. Observe RF at CH1 of the oscilloscope at TRK Servo Close. 2. Turn TAN adjustment screw for A-side until the amplitude of the waveform reaches its maximum and the envelope is very clear. After adjustment, stabilize the screw with an adhesive.	
6 Fine centering adjustment for A-side play	Mechanism assembly Centering adjustment screw for A-side play	• Oscilloscope • STD-901 or STD-902 • MIX resistor 	CN106 X: ⑨ pin (TRK ERR) Y: ①+② pin (TRK SUM)	• Test mode TRK servo OFF Tilt servo ON • Innermost track of STD-901 or STD-902 which does not come in contact with the mechanical stopper.	Note : Be careful not to turn the centering adjustment screw past its limit. Perform fine centering adjustment again by following the same procedure as in "Coarse centering adjustment for A-side play" (2). After adjustment, stabilize the screw with an adhesive.	
7 Crosstalk check and tilt offset adjustment.	VR607	• TV monitor • GGV1003	Crosstalk check screen	• Test mode TRK servo ON Tilt servo ON • GGV1003 still #115	1. Search for address #115 of GGV1003 and still the address 2. Check the crosstalk. If the crosstalk is pronounced, adjust VR607 until the crosstalk is not noticeable.	
When the crosstalk is still noticeable in spite of the adjustment in (7), after carrying out the adjustment in (1) and bringing the tilt indication to T-6 to T-8, use a hexagonal wrench driver (straight type, size : 3mm) to adjust the TAN adjustment screw on the bottom side of the player through the GGV1003 # 115 STILL screen. Afterwards, perform the adjustment procedures from (6).						

Adjustment name	Adjustment point	Measuring equipment and jigs	Measurement point	Player condition	Adjustment procedure	Waveform and connection diagram
8 FCS Servo loop gain adjustment (Perform with either method A or B)	A VR604	• Oscilloscope • GGV1003 • AF Oscillator • Resistor (47kΩ)	CN106 X : ⑦ pin FCS IN Y : ⑥ pin FCS ERR	• Test mode TRK servo ON Tilt servo ON • GGV1003 # 15,000still	1. Xch : Connect to ⑦ pin with 47kΩ Ych : Connect to ⑥ pin 2. Search #15,000 of GGV1003 and still the address. 3. Connect AF oscillator between Xch and 47kΩ and adjust VR604 until Lissajous' figure is a circle.	
	B VR604	• Oscilloscope • GGV1003 • Clip etc. (Short GND—⑦ pin)	CN106 X : — Y : ⑥ pin FCS ERR ⑦ pin GND (⑦, ⑧ pin Short)	• Test mode • Stop mode • F-1	1. Ych : connect to ⑥ pin. Drop ⑦ pin to GND. 2. Put in GGV1003, press reverse side of skip key and bring F-0 to F-1. 3. Press brake and adjust VR604 until the waveform level is 2.6 Vp-p ±0.1 V.	
9 TRK Servo loop gain adjustment (Perform with either method A or B)	A VR603	• Oscilloscope • GGV1003 • AF Oscillator • Resistor (47kΩ)	CN106 X : ⑩ pin TRK IN Y : ⑨ pin TRK ERR	• Test mode TRK servo ON Tilt servo ON • GGV1003 # 15,000still	1. Xch : Connect to ⑩ pin with 47kΩ Ych : Connect to ⑨ pin 2. Search #15,000 of GGV1003 and still the address. 3. Connect AF oscillator between Xch and 47kΩ and adjust VR603 until Lissajous' figure is a circle.	
	B VR603	• Oscilloscope • GGV1003	CN106 X : — Y : ⑨ pin TRK ERR	• Test mode • TRK servo ON Tilt servo ON • F-1 • GGV1003 # 15,000still	1. Ych : connect to ⑨ pin. 2. Search #15,000 of GGV1003 and still the address. 3. Adjust VR603 until the waveform level is 1.6 Vp-p ±0.1 V.	
10 RF level adjustment	VR601	• Oscilloscope • GGV1003	CN106 ③ pin (RF)	• Test mode TRK servo ON Tilt servo ON • GGV1003 # 15,000still	1. Search for address #15,000 of GGV1003, still the address, and observe RF at CH1. 2. Adjust VR601 until RF amplitude is 300mVp-p ±50 mV.	
11 Coarse centering adjustment for B-side play	Centering adjustment screw for B-side play	• Oscilloscope • GGV1003 • MIX resistor  • ⊖ Screwdriver (Large)	CH1 : CN106—9 (TRKG ERR) CH2 : CN106—1 and 2 (TRKG SUM) (X-Y mode)	• Test mode # 100still TRK servo ON/OFF Tilt servo ON	Note : Be careful not to turn the centering adjustment screw past its limit. 1. Move carriage Ass'y toward B-side and still with test disc #100. (TRKG ON) 2. Observe TRK ERR (Xch) and TRK SUM (Ych) at the X-Y mode during TRK Servo OFF. 3. Turn centering adjustment screw for B-side play until the Lissajous' figure is horizontal.	
12 Tangential direction angle adjustment for B-side play	TAN adjustment screw for B-side play	• Oscilloscope • GGV1003 • ⊕ Screwdriver (Medium)	Video output terminal (TV monitor)	• Test mode # 115still TRK servo ON Tilt servo ON	Note : Be careful not to turn the TAN adjustment screw past its limit. 1. Move carriage Ass'y toward B-side and still with test disc #115. (TRKG ON) 2. Turn TAN adjustment screw for B-side play until RF waveform amplitude is at its maximum. 3. Check to see that crosstalk on monitor screen is at its minimum.	
13 Fine centering adjustment for B-side play	Centering adjustment screw for B-side play	• Oscilloscope • GGV1003 • MIX resistor  • ⊖ Screwdriver (Large)	CH1 : CN106—9 (TRKG ERR) CH2 : CN106—1 and 2 (TRKG SUM) (X-Y mode)	• Test mode # 100still TRK servo ON/OFF Tilt servo ON	Perform fine adjustment again following same steps as in procedure (11) "Coarse centering adjustment."	

1.6.5 ELECTRICAL ADJUSTMENT

ADJUSTMENT TABLE OF MAIN ASSY, VDTB ASSY, PALB ASSY AND YCNR ASSY

Adjustment name	Adjustment point	Measuring equipment and jigs	Measurement point	Player condition	Adjustment procedure	Waveform and connection diagram
1 PLL offset adjustment	VR612 (MAIN ASSY)	<ul style="list-style-type: none"> <li>Oscilloscope</li> <li>DC Volt meter</li> <li>STD-901 or STD-902 (or LDD disc)</li> </ul>	Digital sound terminal W331	<ul style="list-style-type: none"> <li>Test mode</li> <li>Tilt servo ON</li> <li>TRK servo ON/OFF</li> <li>Digital sound play</li> </ul>	<p>With TRK Servo OFF, play digital sound and coarsely adjust VR612 so that sound is produced.</p> <p>Connect W331 and DC voltmeter and while playing digital sound, turn TRK Servo on and off. Adjust VR612 so that DC voltage difference between ON and OFF conditions is <math>0 \pm 0.1V</math>.</p>	
2 NTSC Reference clock adjustment	VC202 (VDTB ASSY)	<ul style="list-style-type: none"> <li>Frequency counter</li> <li>GGV1003</li> </ul>	IC201-33(TBC CLK)	<ul style="list-style-type: none"> <li>NTSC PLAY mode.</li> <li>Play the NTSC disc. or Select the NTSC mode with the SYSTEM button of the front panel. (Note1)</li> </ul>	Adjust VC202 so that the 4fsc frequency becomes $14.31818MHz \pm 0.1kHz$ .	
3 PAL Reference clock 910fH adjustment	VC201 (VDTB ASSY)	<ul style="list-style-type: none"> <li>Frequency counter</li> <li>GGV1007</li> </ul>	IC201-33(TBC CLK)	<ul style="list-style-type: none"> <li>PAL PLAY mode.</li> <li>Play the PAL disc. or Select the PAL mode with the SYSTEM button of the front panel. (Note1)</li> </ul>	Adjust VC201 so that the 910fH frequency becomes $14.21875MHz \pm 0.1kHz$ .	
4 PAL Reference clock adjustment	VC203 (VDTB ASSY)	<ul style="list-style-type: none"> <li>Frequency counter</li> <li>GGV1007</li> </ul>	IC201-24(OSD CLK)	<ul style="list-style-type: none"> <li>PAL PAUSE mode.</li> <li>Play the PAL disc and set to pause state. or Select the PAL mode with the SYSTEM button of the front panel. (Note1)</li> </ul>	Adjust VC203 so that the 4fsc frequency becomes $17.734475MHz \pm 0.1kHz$ .	
5 PAL VCXO ERR Offset check	VC201 (VDTB ASSY)	<ul style="list-style-type: none"> <li>Oscilloscope</li> <li>GGV1007</li> </ul>	IC203-1	<ul style="list-style-type: none"> <li>Play the PAL disc.</li> </ul>	<p>Play the PAL disc and check that the voltage of VCXO ERR at IC203-1pin is <math>0V \pm 100mV</math>. If the specified voltage is not obtained, adjust VC201 so that the voltage becomes <math>0V \pm 100mV</math>.</p> <p>Note : The adjustment of VC201 in this step should have priority over that in step 2.</p>	
6 VCO Center frequency adjustment	VR481 (VDTB ASSY)	<ul style="list-style-type: none"> <li>Oscilloscope</li> <li>GGV1007</li> </ul>	CH1 : C405 lead wire CH2 : C499 + lead wire	<ul style="list-style-type: none"> <li>Normal mode</li> <li>GGV1007</li> <li>#4,000 still</li> </ul>	Adjust VR481 so that the center position of jitter of CH2 video signal is delayed to $75\mu S(1H + 11\mu S) \pm 1.4\mu S$ as compared with CH1 video signal.	
7 Output video level adjustment	VR482 (VDTB ASSY)	<ul style="list-style-type: none"> <li>Oscilloscope</li> <li>TV monitor</li> <li>GGV1003</li> </ul>	Video output terminal (75Ω termination or TV monitor connection)	<ul style="list-style-type: none"> <li>Normal mode</li> <li>GGV1003</li> <li>#19,900 still</li> <li>HQ circuit OFF</li> </ul>	Adjust VR482 so that the voltage between the sync tip and the white peak becomes $1.0Vp-p \pm 5\%$ .	

Note1 : PAL mode → NTSC mode → MOD PAL mode (Cyclic change)

Adjustment name	Adjustment point	Measuring equipment and jigs	Measurement point	Player condition	Adjustment procedure	Waveform and connection diagram
8 1H Delay video level adjustment	VR441 (VDTB ASSY)	<ul style="list-style-type: none"> <li>Oscilloscope</li> <li>GGV1003</li> </ul>	CH1 : C443—(minus) lead wire CH2 : C445—(minus) lead wire	<ul style="list-style-type: none"> <li>Normal mode</li> <li>GGV1003</li> <li>#19,900 still</li> </ul>	Adjust VR441 so that the level of the 1H delay video signal becomes the same as that of the main video signal.	<p>Oscilloscope range                      CH1: 20mV/div 10 μs/div                      CH2: 20mV/div                      AC mode</p> <p>Main video signal                      CH1                      CH2                      1H delay video signal</p>
9 VPS Error adjustment	VR521 (VDTB ASSY)	<ul style="list-style-type: none"> <li>TV monitor</li> <li>GGV1003</li> </ul>	Video output terminal (TV monitor)	<ul style="list-style-type: none"> <li>Normal mode</li> <li>GGV1003</li> <li>#8,000 still</li> </ul>	Color irregularity on the magenta screen is minimized.	<p>Rear panel Video output                      TV monitor</p>
10 Y output level adjustment	VR801 (YCNR ASSY)	<ul style="list-style-type: none"> <li>TV monitor</li> <li>Oscilloscope</li> <li>GGV1003</li> </ul>	Video output terminal (75Ω terminated) (NOTE2)	<ul style="list-style-type: none"> <li>Normal mode</li> <li>GGV1003</li> <li>#19,900 still</li> </ul>	Connect video output terminal and oscilloscope. (video output terminal is terminated with 75Ω) When stilled with GGV1003 #19,900 (composite), measure video signal and adjust VR801 until level from sync tip to 100% white becomes 1Vp-p ±5%.	<p>Rear panel Video output                      TV monitor                      Probe (10:1)                      CH1</p> <p>Video level                      1.0Vp-p ±5%</p> <p>Oscillo range                      V: 20mV/div, 10 μs/div (trigger)                      AC mode</p>
11 MOD Y— Signal level adjustment	VR304 (PALB ASSY)	<ul style="list-style-type: none"> <li>Oscilloscope</li> <li>GGV1003</li> </ul>	CH1 : IC303—2 (REFERENCE) CH2 : IC303—1	<ul style="list-style-type: none"> <li>Normal mode</li> <li>GGV1003</li> <li>#19,900 still</li> <li>HQ circuit ON</li> </ul>	Adjust VR304 so that the level of Y signal at IC303—1 pin between the sync tip and the white 100% becomes the same as that of the Y signal at IC303—2 pin.	<p>IC303 ② (10:1)                      CH1                      Probe                      CH2                      IC303 ① (10:1)</p> <p>CH1                      CH2</p>
12 MOD C—Signal level adjustment	VR302 (PALB ASSY)	<ul style="list-style-type: none"> <li>Oscilloscope</li> <li>GGV1003</li> </ul>	CH1 : IC303—2 (REFERENCE) CH2 : IC303—1	<ul style="list-style-type: none"> <li>Normal mode</li> <li>GGV1003</li> <li>#8,000 still</li> </ul>	Adjust VR302 so that the level of C signal at IC303—1 pin becomes the same as that of the C signal at IC303—2 pin.	<p>IC303 ② (10:1)                      CH1                      Probe                      CH2                      IC303 ① (10:1)</p> <p>CH1                      CH2</p>
13 PAL Inverting SC phase adjustment	VR201 (VDTB ASSY)	<ul style="list-style-type: none"> <li>TV monitor</li> <li>GGV1007</li> </ul>	Video output terminal (TV monitor)	<ul style="list-style-type: none"> <li>Normal mode</li> <li>GGV1007 test disc</li> <li>#6,500 still</li> </ul>	Adjust VR201 so that the color irregularity on the magenta screen is minimized at still.	<p>Rear panel Video output                      TV monitor</p>

Note2 : It is possible to terminate video output terminal with 75Ω by connecting TV monitor.

## 1.7 PARTS LIST FOR PACKING AND EXPLODED VIEWS

- NOTES:**
- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
  - The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
  - Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
  - Parts list without notice are common for CLD -2950/WB and CLD -2950/WEZ.

### 1.7.1 PACKING

#### (1) CONTRAST OF CLD - 2950/WB AND CLD - 2950/WEZ.

CLD - 2950/WB and CLD - 2950/WEZ have the same construction except for the following :

Mark	No.	Symbol & Description	Part No.	
			CLD - 2950/WB	CLD - 2950/WEZ
NSP	1	Caution (UC)	VRR1020	Not used
	1	Caution (EW)	Not used	VRM1027
	4	Operating instructions (Dutch/Swedish/Spanish/Portuguese)	Not used	VRF1027
	5	Caution	Not used	VRR1009

#### (2) FOR CLD - 2950/WB

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	1	Caution (UC)	VRR1020	NSP	12	Polyethylene bag	Z21-029
	2	.....			13	Pad L	VHA1126
	3	Operating instructions (English/French/German/Italian)	VRE1021		14	Pad R	VHA1127
	4	.....			15	Mirror mat	VHL1012
	5	.....			16	Packing case	VHG1353
NSP	6	Polyethylene bag	VHL-014	NSP	17	Warranty card	ARW-088
	7	Battery cover	VNK2431		18	.....	
	8	Remote control unit	VXX2030		19	Caution label	VRM1044
NSP	9	Battery (R03, AAA)	VEM-022	NSP	20	Euro scart cable(21P)	VDE1031
	10	.....			21	Polyethylene bag	Z21-029
	11	Connection cord	VDE-055		22	Cable case	VHG1200

### 1.7.2 EXTERIOR AND DISC TRAY

#### (1) CONTRAST OF CLD - 2950/WB AND CLD - 2950/WEZ.

CLD - 2950/WB and CLD - 2950/WEZ have the same construction except for the following :

Mark	No.	Symbol & Description	Part No.	
			CLD - 2950/WB	CLD - 2950/WEZ
	35	Caution label	PRW1018	VRW1094
	36	Caution label(HE)	Not used	VRW1297

#### (2) FOR CLD - 2950/WB

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	1	Bonnet S	VXX1932	6	Guide plate (R)	VNE1806	
	2	Screw	BCZ40P060FZK	7	Guide plate (L)	VNE1805	
	3	Screw	BBT30P060FCC	8	CD tray	VNK2395	
NSP	4	Damp cushion	VEC1602	9	Lock plate spring	VBH1188	
	5	Screw	VBA1032	10	Lock plate	VNL1513	

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	11	Stop ring	VEB1091	24	.....		
	12	Screw	BPZ30P060FCU	25	Tray ASSY-S	VXX2035	
NSP	13	Cushion	VEC1660	26	Tray panel ASSY-S	VXX1931	
NSP	14	LD tray	VNK2394	27	Disc pad (L)	VEC1657	
NSP	15	Damp cushion	VEC1110	28	Disc pad (C)	VEC1658	
	16	Door spring	VBH1223	NSP	29	Carry label	VRW1289
	17	Door shaft	VLL1441		30	.....	
	18	Screw	BPZ20P040FZK	31	T back	VNE1946	
	19	Door holder	VNE1905	32	LD tray ASSY	VXA2085	
	20	CD door	VNK2320	33	Screw	BPZ30P080FCU	
	21	Damper ASSY	VXA1999	34	Caution label(G)	VRW-329	
NSP	22	Laser disc badge	VAM1029	35	Caution label	PRW1018	
NSP	23	Tray panel	VNK2319	36	.....		

### 1.7.3 UPPER SECTION

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	1	.....		NSP	8	YCNR ASSY	VWV1380
	2	Center angle	VNE1897	NSP	9	PALB ASSY	VWV1379
	3	PCB holder	VNE1895	NSP	10	VDTB ASSY	VWS1130
	4	.....			11	Screw	BBT30P080FCC
	5	Damper plate	VBK1045	NSP	12	SCRB ASSY	VWV1381
NSP	6	P. plate holder	PNY-405		13	Screw	IBZ30P080FCC
NSP	7	Wire clip (A)	VEC1355				

### 1.7.4 FRONT PANEL SECTION

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
NSP	1	Front panel	VNK2691		13	LED lens (O)	VNK1755
	2	FL lens	VEC1630		14	L key (B)	VNK2361
	3	Sub panel	VNK2690		15	LED lens	PNW2019
NSP	4	HEPB ASSY	VWV1368		16	Power button	VNK2329
NSP	5	Jack holder	VNE1609		17	FLKY ASSY	VWG1527
	6	Snap plate	VNE1102	NSP	18	PONS ASSY	VWG1528
	7	Headphone knob	PAC1707		19	Name plate	VAM1032
	8	L key (A)	VNK2360		20	Shuttle knob	VNK2321
	9	LED lens (B)	VNK2316	NSP	21	Damp cushion	VEC1110
	10	Main key	VNK2365		22	Screw	BPZ26P060FCU
	11	Skip key R	VNK2323		23	Front panel ASSY-S	VXX2048
	12	Skip key L	VNK2322		24	Cushion (L)	VEC1331
					25	Screw	BPZ26P080FCU

### 1.7.5 DISC CLAMPER SECTION

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	1	Ball holder	VNL1616	9	Clamp spring	VBH1239	
	2	Ball	VNX1013	10	Rubber sheet	VEB1114	
	3	LD hub	VNT1047	11	Ball holder	VNL1289	
	4	Ball cover	VNL1602	12	Center plate	VNE1898	
	5	Cover spring	VBH1234	13	Clamper holder	VNL1605	
	6	LD spring	VBH1240	14	Stabilizer	VNE1906	
	7	Clamper head	VNL1603	15	Screw	CPZ20P060FMC	
	8	Clamper	VNL1604				

**1.7.6 BOTTOM SECTION**

**(1) CONTRAST OF CLD - 2950/WB AND CLD - 2950/WEZ.**

CLD - 2950/WB and CLD - 2950/WEZ have the same construction except for the following :

Mark	No.	Symbol & Description	Part No.	
			CLD - 2950/WB	CLD - 2950/WEZ
△	7	AC power cord	PDG1055	PDG1003
	24	Fuse (T5A)	PEK1003	Not used

**(2) FOR CLD - 2950/WB**

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
NSP	1	Base chassis	VNA1353		21	Screw	BBZ30P060FCC
	2	Insulator ASSY	VXA1998		22	Side stay	VNE1896
	3	Board spacer	VEC1623	NSP	23	Side stay (R)	VNE1810
	4	PCB spacer	PNY-404	△	24	Fuse (T5A)	PEK1003
NSP	5	PCB stay	VEC1174		25	AC cord tube	VEC1651
	6	Power supply ASSY	VWR1216		26	.....	
△	7	AC power cord	PDG1055	NSP	27	Side stay (L)	VNE1809
	8	Cord stopper	CM-22B		28	.....	
	9	Rear panel	VNA1421		29	.....	
	10	Tray stopper	VNL1600		30	.....	
NSP	11	MAIN ASSY	VWX1205		31	Screw	IBZ30P080FCC
NSP	12	AFMB ASSY	VWV1353	NSP	32	HM spacer	VEB1215
	13	Carriage stopper	VNE1919		33	.....	
NSP	14	Damp cushion	VEC1602		34	Model label	VRW1404
	15	Screw	BBZ30P080FMC	NSP	35	Wire clamp (A)	VEC1217
	16	Screw	BBT30P080FCC	NSP	36	Caution label(F)	VRW-328
	17	Screw	BPZ30P140FMC	NSP	37	PCB holder(B)	VNE1772
	18	Screw	BBZ30P040FMC		38	PCB holder	VEC1624
NSP	19	Cord holder	Z09-061		39	.....	
	20	Front angle	VNE1894		40	.....	
					41	.....	

**1.7.7 MECHANISM SECTION**

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	1	Mechanism base	VNK1990		16	CAS spring	VBH1190
	2	Clamp cam	VNL1621		17	Shaft holder	VNE1817
	3	Cam gear	VNL1507		18	Rubber belt	VEB1184
	4	CD plate	VNL1576		19	Synchro gear ASSY	VXA1822
	5	Cam sand	VNL1511	NSP	20	LOSB ASSY	VWG1471
NSP	6	Carriage motor	VXM1033		21	Screw	BMZ26P040FMC
	7	Roller	VNL1042		22	Screw	Z39-019
	8	Motor pulley	PNW1643	NSP	23	LOMB ASSY	VWG1470
	9	L-SW lever	VNL1504				
	10	C-SW lever	VNL1505				
	11	R-SW lever	VNL1506				
	12	Center gear	VNL1509				
	13	Twin gear	VNL1508				
	14	Gear pully	VNL1510				
	15	CDP spring	VBH1191				

**1.7.8 MECHANISM ASSY**

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	1	Tilt base (Upper)	VNB1027	△	36	Spindle motor ASSY	VXA1986
	2	Rack (Upper)	VNL1560		37	Screw	PMA30P050FMC
	3	Rack spring (Upper)	VBH1213		38	Y gear	VNL1501
	4	CA shaft (Upper)	VLL1446		39	Washer	WT26D060D025
	5	Screw	PMZ20P070FMC		40	Tilt cam spring	VBH1189
	6	Shaft support	VNL1563		41	FG base	VNL1577
	7	support spring	VBH1236	NSP	42	FG ASSY	VWG1472
	8	Screw	IPZ30P060FMC		43	Tilt base (lower)	VNL1555
	9	B cam spring	VBH1233		44	MK flexible	VNP1439
	10	B cam	VNL1564		45	Screw	ABZ30P060FMC
	11	Lever spring	VBH1214		46	TM guide	VNL1558
	12	Lever SW	DSK1003		47	Screw	PPZ20P080FMC
	13	R plate ASSY	VNL1566		48	CA shaft (lower)	VLL1447
	14	Screw	BBZ26P060FMC	NSP	49	Spindle motor	VXM1053
	15	TM rack	VNL1556	NSP	50	Oil stopper washer	VBF1002
	16	Screw	CBZ26P060FMC	NSP	51	Turn table ASSY	VXA1760
	17	Turn gear	VNL1565	NSP	52	Rubber sheet	VEB1135
	18	TM support	VNE1888		53	Centering spring	VBH1024
	19	Washer	YE20FUC		54	PRC hub	VNL1612
	20	Washer	WA32D080D050		55	PRC table	VNL1613
	21	Head lock	VNL1580		56	Screw	CPZ20P060FMC
NSP	22	CNNB ASSY	VWG1469		57	Lock lever	VNL1562
	23	TAN guide	VNE1887		58	Tilt cam	VNL1559
	24	Rack (lower)	VNL1567		59	Spacer	VEB1020
	25	Rack spring (lower)	VBH1215	NSP	60	Earth lead unit	VDA1455
	26	Screw	BBZ30P060FMC		61	Screw	Z39-019
	27	SW base	VNE1886		62	Washer	WA32D080D025
	28	Screw	PBZ26P060FMC		63	Carriage ASSY	VWT1116
	29	Slide SW	OSH1001		64	Motor base	VNE1889
	30	Screw	PMZ20P060FMC	NSP	65	Stop cushion	VEC1605
	31	.....			66	Screw	CPZ26P080FMC
	32	Thrust spring	VBH1235		67	Housing ASSY (3P)	VKP2011
	33	Tilt spring	VBH1218		68	Housing ASSY (4P)	VKP2025
	34	Key lock	VBK1044		69	Housing ASSY (2P)	VKP2020
	35	CB holder	VNL1618				

**1.7.9 CARRIAGE ASSY**

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	1	TAN plate ASSY	VXA1981		19	Gear (B)	VNL1571
	2	Screw	BMZ20P080FMC		20	Screw	PMA20P040FMC
	3	TAN spring (B)	VBH1217	NSP	21	Motor holder	VNL1584
	4	TAN lever (B)	VNL1569		22	Gear (E)	VNL1574
	5	.....			23	Gear (F)	VNL1575
	6	TAN lever (A)	VNL1568		24	.....	
	7	TAN spring (A)	VBH1237	NSP	25	Gear (D)	VNL1573
	8	Screw (S)	VBA1016	NSP	26	Gear shaft	VLL1448
	9	Screw	PBB26P080FMC	NSP	27	PCB board	VNP1425
NSP	10	Shaft holder	VNT1042	NSP	28	ZH connector	B2B-ZR
	11	Limit SW	OSH1001	NSP	29	Slider motor	VXM1027
	12	Screw	PMZ20P060FMC		30	Gear (A)	VNL1570
	13	Screw	BBZ26P060FZK		31	Box cover	VNL1578
	14	Screw	BPZ26P060FMC		32	Housing ASSY	VKP1852
	15	Flexible holder	VNL1579				
	16	Screw	PPZ20P060FZK	NSP	33	PICKUP ASSY	VWY1040
	17	Washer	WT17D034D050		34	Motor holder ASSY-S	VXX2015
NSP	18	Gear (C)	VNL1572		35	Slider motor ASSY	VXX2014



# 1.8 PCB PARTS LIST

**NOTES:**

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "●" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω	→	56 × 10 <sup>1</sup>	→	561	.....	RD1/8PM	<span style="border: 1px solid black; padding: 0 2px;">5</span> <span style="border: 1px solid black; padding: 0 2px;">6</span> <span style="border: 1px solid black; padding: 0 2px;">1</span> J
47kΩ	→	47 × 10 <sup>3</sup>	→	473	.....	RD1/4PS	<span style="border: 1px solid black; padding: 0 2px;">4</span> <span style="border: 1px solid black; padding: 0 2px;">7</span> <span style="border: 1px solid black; padding: 0 2px;">3</span> J
0.5Ω	→	0R5	.....			RN2H	<span style="border: 1px solid black; padding: 0 2px;">0</span> <span style="border: 1px solid black; padding: 0 2px;">R</span> <span style="border: 1px solid black; padding: 0 2px;">5</span> K
1Ω	→	010	.....			RSIP	<span style="border: 1px solid black; padding: 0 2px;">0</span> <span style="border: 1px solid black; padding: 0 2px;">1</span> <span style="border: 1px solid black; padding: 0 2px;">0</span> K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ	→	562 × 10 <sup>1</sup>	→	5621	.....	RN1/4PC	<span style="border: 1px solid black; padding: 0 2px;">5</span> <span style="border: 1px solid black; padding: 0 2px;">6</span> <span style="border: 1px solid black; padding: 0 2px;">2</span> <span style="border: 1px solid black; padding: 0 2px;">1</span> F
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Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
<b>LIST OF ASSEMBLIES</b>			<b>SWITCHES AND RELAYS</b>		
NSP	FLKB ASSY	VWM1475	S100 - S102, S112 - S116		RSG1030
	└─ FLKY ASSY	VWG1527	S103 - S111		RSG1034
NSP	└─ PONS ASSY	VWG1528	S117		VSD1008
NSP	└─ HEPB ASSY	VWV1368	<b>CAPACITORS</b>		
	MOTHER ASSY	VWM1460	C101		CEAL100M16
NSP	└─ MAIN ASSY	VWX1205	C104		CEAL101M6R3
NSP	└─ AFMB ASSY	VWV1353	C105		CEAS221M6R3
	VTPB ASSY	VWM1456	C106		CKPUYB101K50
NSP	└─ VDTB ASSY	VWS1130	C102, C103, C108		CKPUYF223Z25
NSP	└─ PALB ASSY	VWV1379	C100, C107		CKPUYX472M16
NSP	└─ YCNR ASSY	VWV1380	<b>RESISTORS</b>		
NSP	└─ SCRБ ASSY	VWV1381	R101		RA5T103J
	MACB ASSY	VWM1420	R100		RA6S104J
NSP	└─ CNNB ASSY	VWG1469	Other Resistors		
NSP	└─ LOMB ASSY	VWG1470			RD1/6PM <span style="border: 1px solid black; padding: 0 2px;"> </span> <span style="border: 1px solid black; padding: 0 2px;"> </span> <span style="border: 1px solid black; padding: 0 2px;"> </span> J
NSP	└─ LOSB ASSY	VWG1471	<b>OTHERS</b>		
NSP	└─ FG ASSY	VWG1472	V100	4P Cable holder	51048 - 0400
	POWER SUPPLY ASSY	VWR1216		Remote sensor	GPIU78R
	FLKB ASSY			FL Tube	VAW1032
	OTHERS			Spacer	VEC1599
	PCB(FLKB)	VNP1419		FL Holder(FE)	VNF1082
	FLKY ASSY		X100	Ceramic resonator	VSS1031
	SEMICONDUCTORS		<b>PONS ASSY</b>		
IC100		PD3273A	<b>SEMICONDUCTORS</b>		
IC101		S - 806D	D200		SLH34VCF04
Q101		DTA144ES	<b>SWITCHES AND RELAYS</b>		
Q100		DTC114ES	S200		RSG1030
Q102, Q104, Q105, Q107		DTC124ES	<b>RESISTORS</b>		
D103 - D106		1SS252	R200		RD1/6PM151J
D100 - D102		1SS254	<b>HEPB ASSY</b>		
D107, D110		SEL3410ELC05	<b>COILS AND FILTERS</b>		
D109		VEL1017	F301 - F303		VTH1016
<b>COILS AND FILTERS</b>			<b>COILS AND FILTERS</b>		
L100, L101		LAU220J			

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
<b>CAPACITORS</b>			C161,C810	CCSQCH151J50	
C301,C302		CKPUYB102K50	C812	CCSQCH221J50	
C300		CKPUYF223Z25	C208,C209	CCSQCH271J50	
<b>RESISTORS</b>			C106,C107,C813	CCSQCH330J50	
VR300	(0.5KB)	VCS1015	C931	CCSQCH390J50	
<b>OTHERS</b>			C260-C263,C963	CCSQCH470J50	
CN300	3P Jumper connector(2MMP)	52151-0310	C806	CCSQCH680J50	
JA300	Headphone jack	RKN1002	C871	CEALNP100M16	
<b>MAIN ASSY</b>			C227,C281,C902,C926	CEALNP2R2M35	
<b>SEMICONDUCTORS</b>			C522	CEANP100M35	
IC401		BA10393F	C401	CEANP101M10	
IC202,IC205,IC402,IC903		BA4560F	C274,C275	CEANP220M10	
IC803		LA6510L	C838	CEANP470M10	
IC802		LC78681E	C904	CEAS010M50	
IC206		NJM78L08A	C225,C226,C256,C895	CEAS101M10	
IC501		NJM78L09A	C101,C230,C252,C253,C502	CEAS470M16	
IC207		NJM79L08A	C801,C803,C833,C836,C842	CEAS470M16	
IC801		PAC002A	C844,C927,C974,C975	CEAS470M16	
IC901		PAC003A	C207,C255,C257,C270,C271	CEAS471M10	
IC101		PD0194A	C279	CEAS471M10	
IC201		PD2026B	C913	CEASR47M50	
IC902		TA8464K	C970	CEHAQ010M50	
Q102,Q154,Q492,Q802,Q963		2SA1037K	C967,C968	CEHAQ100M50	
Q501		2SA933S	C976,C987	CEHAQ220M50	
Q834		2SB1237X	C228	CEJA100M35	
Q493		2SC1740S	C893,C933	CEJA470M10	
Q201,Q202,Q801,Q805		2SC2412K	C845	CEJA4R7M50	
Q903-Q905,Q907,Q913		2SC2412K	C908,C910	CFTYA104J50	
Q152,Q803,Q804		2SC3802K	C521	CFTYA124J50	
Q204,Q205		2SD2144S	C905	CFTYA224J50	
Q962		2SK184	C891,C914,C936,C969	CKSQYB102K50	
Q203,Q207-Q213,Q491,Q916		DTA124EK	C110,C907	CKSQYB222K50	
Q103,Q104,Q206,Q502,Q503		DTC124EK	C888	CKSQYB472K50	
D202,D501		11EQS06	C105,C122,C160,C213,C231	CKSQYF103Z50	
D101,D102,D205-D208,D401		1SS254	C234,C251,C286,C288	CKSQYF103Z50	
D410,D492,D493,D502,D520		1SS254	C402-C404,C410,C807	CKSQYF103Z50	
D905,D907,D963,D964		1SS254	C834,C835,C843,C872,C876	CKSQYF103Z50	
D201		FC54M	C894,C929,C961,C962	CKSQYF103Z50	
D491		MTZJ10B	C102,C151,C196-C198,C215	CKSQYF104Z25	
D510,D511		MTZJ5.1B	C254,C284,C285,C305	CKSQYF104Z25	
D494		MTZJ6.2A	C308,C309,C501,C802,C804	CKSQYF104Z25	
<b>COILS AND FILTERS</b>			C831,C832,C840,C841	CKSQYF104Z25	
L206-L208		LAU010J	C873,C874,C892,C896,C901	CKSQYF104Z25	
L810		LAU101J	C915,C928,C932,C981	CKSQYF223Z50	
L802-L804		LAU121J	C405,C523	CKSQYF333Z25	
L201-L204,L800,L801		LAU220J	C837,C930	CKSQYF473Z25	
L205		LAU820J	C103,C214,C808,C815,C847	CKSQYF473Z25	
F201		VTH1016	C875,C877,C911,C912,C925	CKSQYF473Z25	
<b>CAPACITORS</b>			C964,C971,C983,C984	CKSQYF473Z25	
C159,C809,C811		CCSQCH100D50	C210	CKSQYF473Z50	
C108,C109,C120,C121		CCSQCH101J50	C934	CQMA122J50	
C258,C259		CCSQCH101J50	C903,C909	CQMA222J50	
C814,C846,C848		CCSQCH121J50	C278,C282	CQMA332J50	
C232		CCSQCH150J50	C491	VCH1039	

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
<b>RESISTORS</b>			<b>COILS AND FILTERS</b>		
R138		RD1/6PM183J	L701		LAU181J
R192,R193		RD1/6PM220J	L700		LAU220J
R180		RD1/6PM333J	F701		VTF1035
R212,R213,R220,R221		RD1/6PM470J	F702		VTF1036
R839,R840		RD1/6PM470J	<b>CAPACITORS</b>		
R163,R501		RD1/6PM471J	C701,C722,C760		CCSQCH101J50
R909		RD1/6PM473J	C718		CCSQCH150J50
R502		RD1/6PM563J	C702		CCSQCH151J50
R407,R408		RN1/10SE103D	C704,C750		CCSQCH180J50
R406,R409		RN1/10SE333D	C717		CCSQCH220J50
R259-R262		RN1/10SE473D	C714,C715,C724,C748,C749		CCSQCH221J50
VR606		VRTB6VS153	C761		CCSQCH221J50
VR601		VRTB6VS222	C705		CCSQCH270J50
VR605		VRTB6VS333	C706		CCSQCH330J50
VR603		VRTB6VS472	C700		CCSQCH390J50
VR604,VR607,VR612		VRTB6VS473	C751		CCSQCH430J50
Other Resistors		RS1/10S□□□J	C719,C753		CCSQCH561J50
<b>OTHERS</b>			C709		CCSQCH680J50
3P Cable holder		51048-0300	C703		CCSQCH820J50
5P Cable holder		51048-0500	C723,C725,C745,C777		CEANP100M35
11P Cable holder		51048-1100	C716,C752,C755		CEANP220M10
CN106	11P Top post	B11P-SHF-1AA	C713		CEANP470M10
CN514	KR Connector	B2B-PH-K-S	C712,C729,C732,C746,C765		CEAS101M10
CN104	KR Connector	B3B-PH-K-S	C747		CEAS470M16
CN512	KR Connector	B3B-PH-K-E	C730		CEAS47M50
CN516	KR Connector	B3B-PH-K-R	C728		CEASR47M50
CN513	KR Connector	B3B-PH-K-Y	C762		CEHAQ100M50
CN107	KR Connector	B4B-PH-K-S	C754		CFTYA104J50
CN110	5P Top post	B5B-EH	C710		CFTYA153J50
CN504	KR Connector	B6B-PH-K-S	C727,C764		CFTYA473J50
J1	2mm Pitch flat cable(11P)	D20PDY1120G	C711,C731,C733,C756		CKSQYB102K50
JA3,JA4	Remote control jack	RKN1004	C707,C708,C778,C779		CKSQYF103Z50
CN105	2mm Pitch jumper connector(6P)	SBRK06S-4	C721,C759		CQMA152J50
CN103	24P Connector(straight type)	SLEM24S-2	C720,C758		CQMA472J50
CN501	1.0mm Pitch FFC Connector	SLW28S-1C7	C726,C763		CQMA752J50
JA8	Optical output jack	TOTX178	<b>RESISTORS</b>		
JA6	PCB Binder	VEF1040	All Resistors		RS1/10S□□□J
JA6	2P Pin jack	VKB1031	<b>OTHERS</b>		
JA2	64P Shrink IC socket	VKH1004	CN704	KR Connector	B2B-PH-K-S
	Mini jack	VKN1165	CN702	KR Connector	B3B-PH-K-E
	Screw terminal	VNE1841	CN703	KR Connector	B3B-PH-K-Y
	IC Heat sink(AL)	VNE1921	<b>VDTB ASSY</b>		
	Earth plate	VNF-091	<b>SEMICONDUCTORS</b>		
X101	Ceramic resonator	VSS1040	IC203,IC602		BA4560F
X201	Crystal resonator(16MHz)	VSS1057	IC403		CXL1009P
<b>AFMB ASSY</b>			IC405,IC406		ICP-N5
<b>SEMICONDUCTORS</b>			IC404		PA0017-P
IC700		HA12127ANT	IC401		PA5013A
Q704-Q707		2SA1037K	IC201		PD3239A
Q709,Q713		2SK184	IC402		PM0001
Q702,Q703		DTA124EK	IC601		PM3002
Q708,Q710-Q712		DTC124EK	IC207		TC4W53F
D700-D706,D708		1SS254	IC202		TC7SU04F

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
Q204, Q207, Q406, Q407, Q411 Q456, Q496, Q502, Q511, Q611 Q615, Q627, Q703, Q704 Q401 Q431		2SA1037K 2SA1037K 2SA1037K 2SB1237X 2SC1740S	C237 C411, C412, C498, C609 C536 C401, C530 C551, C613, C620		CCSQCH680J50 CCSQCH820J50 CCSQCH910J50 CEANP100M25 CEANP220M10
Q202, Q203, Q205, Q206 Q208 - Q210, Q404, Q408 Q497 - Q501, Q601 - Q605, Q608 Q614, Q619, Q620, Q626 Q700 - Q702		2SC2412K 2SC2412K 2SC2412K 2SC2412K 2SC2412K	C405, C630 C537 C522 C472, C473, C477 C213, C434, C445, C452, C499		CEANP2R2M50 CEAS010M50 CEAS100M50 CEAS3R3M50 CEAS470M16
Q409 Q402 Q201, Q403, Q405, Q606, Q609 Q621 - Q623 Q607, Q610, Q612, Q613		2SC3802K 2SD1858X DTA124EK DTA124EK DTC124EK	C484 C201, C220 - C222, C227, C428 C457, C474, C489, C490 C501, C502, C512, C521, C525 C533, C622, C624, C643, C647		CEJA100M16 CEJA470M6R3 CEJA470M6R3 CEJA470M6R3 CEJA470M6R3
Q624, Q625 D401, D601, D602, D609, D610 D201 D203		DTC124EK 1SS254 DAN202K SVC201 SPA	C675, C676 C619 C443, C628 C223 C446, C618		CEJA470M6R3 CEJANP100M10 CEJANP4R7M16 CEJANPR47M50 CFTYA103J50
<b>COILS AND FILTERS</b>					
L203, L204, L208, L412 - L415 L521 L206, L207 L430 L497		LAU120J LAU120J LAU121J LAU150J LAU151J	C514, C617 C224 C471, C603 C610 C515, C517		CFTYA104J50 CFTYA223J50 CFTYA224J50 CFTYA563J50 CFTYA683J50
L201, L202, L209 L496, L701 L702 L525 L523		LAU1R2J LAU220J LAU270J LAU330J LAU390J	C202, C209, C214 - C217 C225, C226, C230, C232, C233 C242, C414, C418, C421, C422 C425, C426, C458 - C460 C475, C476, C486, C535, C602		CKSQYF103Z50 CKSQYF103Z50 CKSQYF103Z50 CKSQYF103Z50 CKSQYF103Z50
L432 L433 L522 L411, L431 L458		LAU430J LAU470J LAU560J LAU680J LFA221J	C604, C615, C616, C621, C644 C776, C777, C780, C781, C783 C403, C404, C427, C429, C435 C442, C479 - C481, C483 C503 - C506, C511, C513, C526		CKSQYF103Z50 CKSQYF103Z50 CKSQYF104Z25 CKSQYF104Z25 CKSQYF104Z25
L457, L524 F201		LFA561J VTF1051	C531 C407, C408, C466, C467 C487, C488, C527, C601, C629 C219, C605 - C607 C608		CKSQYF104Z25 CKSQYF473Z25 CKSQYF473Z25 CQMA102J50 CQMA152J50
<b>CAPACITORS</b>					
C203, C431, C438, C441 C207, C231, C241, C415, C417 C500, C532, C774 C212, C238, C419, C461, C496 C430		CCSQCH050C50 CCSQCH100D50 CCSQCH100D50 CCSQCH101J50 CCSQCH120J50	C627 C444, C611 C614 C218, C626 VC201		CQMA222J50 CQMA272J50 CQMA332J50 CQMA472J50 PCM1001
C456 C439, C440, C516, C520 C509, C550, C771, C772 C409, C423, C424, C485, C529 C612, C633		CCSQCH121J50 CCSQCH150J50 CCSQCH151J50 CCSQCH180J50 CCSQCH180J50	VC202 VC203		VCM - 008 VCM1005
C410, C437 C236 C204, C208, C416, C495, C510 C775, C779 C402, C463, C507, C508		CCSQCH220J50 CCSQCH221J50 CCSQCH270J50 CCSQCH270J50 CCSQCH271J50		<b>RESISTORS</b> R550 (10,1/6W) R496 R406 R403 R431	DCN1002 RD1/6PM101J RD1/6PM224J RD1/6PM271J RD1/6PM510J
C206, C240, C462 C211, C433, C524, C528 C406 C205, C239, C455 C549, C778		CCSQCH330J50 CCSQCH390J50 CCSQCH391J50 CCSQCH470J50 CCSQCH560J50	R512, R519, R520 R612, R613 R771 R231, R475, R521 R438		RD1/6PM680J RN1/10SE103D RN1/10SE202D RN1/10SE562D RN1/6PQ1803F

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
R511		RN1/6PQ2002F	C341,C354,C358,C362		CEAS470M16
R415,R416		RN1/6PQ3002F	C309		CEJA100M16
R434		RN1/6PQ5101F	C303		CEJA3R3M50
VR201		VRTB6VS222	C319,C323,C336,C339,C360		CEJA470M6R3
VR441		VRTB6VS223	C373,C375,C380-C382,C386		CEJA470M6R3
VR481,VR482,VR521		VRTB6VS472	C388,C390		CEJA470M6R3
	Other Resistors	RS1/10S□□□J	C314		CFTYA223J50
<b>OTHERS</b>			C301,C305,C308,C318		CKSQYF103Z50
	5P Cable holder	51048-0500	C320-C322,C324,C328,C329		CKSQYF103Z50
	7P Cable holder	51048-0700	C335,C351,C353,C355,C357		CKSQYF103Z50
	12P Cable holder	51048-1200	C359,C361,C363,C366,C369		CKSQYF103Z50
CN603	1.0mm Pitch FFC Connector	SLW28S-1C7	C374,C376,C385,C395,C396		CKSQYF103Z50
	PCB Binder	VEF1040	C334,C340,C342,C389,C391		CKSQYF104Z25
			C302		CQMA392J50
JA14	1P Pin jack	VKB1063	<b>RESISTORS</b>		
JA11	4P Mini DIN socket	VKN1072	R339,R387		RD1/6PM101J
	Screw terminal	VNE1841	R355,R361		RD1/6PM470J
X202	Crystal resonator(14.32MHz)	VSS1029	R306,R307		RD1/6PM751J
X203	Crystal resonator(17.73MHz)	VSS1059	R316		RN1/10SE562D
			R323		RN1/6PQ2401F
X201	Crystal resonator(14.32MHz)	VSS1060	VR304		VRTB6VS222
			VR302		VRTB6VS471
<b>PALB ASSY</b>				Other Resistors	RS1/10S□□□J
<b>SEMICONDUCTORS</b>			<b>OTHERS</b>		
IC303		BU4053BCF	3P Cable holder		51048-0300
IC301		M50552-132SP	4P Cable holder		51048-0400
IC304		MM1130XD	7P Cable holder		51048-0700
IC302		TA7320P	12P Cable holder		51048-1200
Q303,Q310,Q314,Q319,Q363		2SA1037K	CN302	KR Connector	B3B-PH-K-R
Q315,Q316,Q361,Q365		2SC1740S	CN303	KR Connector	B6B-PH-K-S
Q302,Q308,Q309,Q311		2SC2412K	CN301	3P Side post	B3SP-SHF-1AA
Q321,Q322,Q352,Q353		2SC2412K	X301	Crystal resonator(8.87MHz)	VSS1062
Q355,Q356,Q359,Q360,Q953		2SC2412K			
Q301,Q304,Q307,Q312,Q313		DTA124EK			
Q317,Q320,Q351		DTA124EK	<b>YCNR ASSY</b>		
Q305,Q306,Q318		DTC124EK	<b>SEMICONDUCTORS</b>		
D301		DAN202K	IC803		BU4053BCF
D302		DAP202K	IC801		CXD2024Q
<b>COILS AND FILTERS</b>			IC804		TA7302P
L302,L303,L355		LAU120J	Q804,Q807,Q809,Q811,Q814		2SA1037K
L304		LAU220J	Q821,Q822,Q827-Q829		2SA1037K
L301		LAU270J	Q837,Q838		2SA1037K
F303		VTF1034	Q825		2SA933S
<b>CAPACITORS</b>			Q802,Q803,Q806,Q808,Q810		2SC2412K
C312		CCSQCH050C50	Q815-Q817,Q820,Q823,Q824		2SC2412K
C315		CCSQCH070D50	Q830,Q831,Q836,Q839		2SC2412K
C356,C364,C392		CCSQCH101J50	Q840		DTA124EK
C327		CCSQCH151J50	Q801		DTC124EK
C365		CCSQCH181J50	<b>COILS AND FILTERS</b>		
C316		CCSQCH200J50	L801,L802,L805-L808		LAU150J
C368		CCSQCH220J50	L803,L804,L810		LAU220J
C311,C317		CCSQCH270J50	L809		LAU470J
C306,C307,C310,C325		CCSQCH330J50	<b>CAPACITORS</b>		
C326		CCSQCH390J50	C809,C839,C846,C853		CCSQCH060D50
C352		CCSQSL391J50	C897,C916		CCSQCH120J50
C304		CCSQSL561J50	C864		CCSQCH180J50
C367,C384		CEANP220M10	C810,C811,C840,C841		CCSQCH220J50
C383		CEANP470M10	C847,C848,C854,C855		CCSQCH220J50
C313		CEAS010M50			

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
C892,C898 C813,C843,C850,C857,C872 C812,C842,C849,C856,C873 C805 C814		CCSQCH390J50 CCSQCH470J50 CCSQCH560J50 CCSQL102J50 CEAS010M50	R140,R141,R159,R163		RD1/6PM750J
C871 C806,C815,C816,C818,C820 C823,C825,C831,C835,C874 C876,C880,C885,C887,C893 C896,C906,C907,C909		CEJA100M16 CEJA470M6R3 CEJA470M6R3 CEJA470M6R3 CEJA470M6R3	Other Resistors		RSI/10S□□□J
C911-C913 C808,C826,C865,C867,C868 C890,C891,C905 C807,C817,C819,C821,C822 C824,C827-C830,C832-C834		CEJA470M6R3 CKSQYF103Z50 CKSQYF103Z50 CKSQYF104Z25 CKSQYF104Z25	<b>OTHERS</b> JA101	RGB Connector Earth plate(FE)	VKB1056 VNF1081
C836-C838,C844,C845 C851,C852,C866,C869,C870 C875,C877,C879,C881 C883,C884,C886,C888 C894,C895,C900,C908,C910		CKSQYF104Z25 CKSQYF104Z25 CKSQYF104Z25 CKSQYF104Z25 CKSQYF104Z25	<b>MACB ASSY</b> <b>OTHERS</b>	PCB(MACB)	VNP1429
C915		CKSQYF104Z25	<b>CNNB ASSY</b> <b>RESISTORS</b>		
<b>RESISTORS</b> R915 R814,R816 R822 R901 R879,R885		RD1/6PM103J RD1/6PM271J RD1/6PM681J RN1/10SE182D RN1/10SE202D	R102		RD1/6PM391J
R818,R820,R886 R864,R902 VR801		RN1/10SE222D RN1/10SE562D VRTB6VS472	<b>OTHERS</b> CN205 CN203 CN204	KR Connector(3P) 24P Connector(straight type) 25P FFC Connector(side)	B3B-PH-K SLEM24S-2 SLEM25R-2
Other Resistors		RSI/10S□□□J	<b>LOMB ASSY</b> <b>OTHERS</b>	4P Cable holder	51048-0400
<b>OTHERS</b> 3P Cable holder 4P Cable holder J801 2mm Pitch flat cable(3P) DL801,DL802 Filter		51048-0300 51048-0400 D20PDD0310E VTN1001	<b>LOSB ASSY</b> <b>SWITCHES AND RELAYS</b>		DSG1015
<b>SCRB ASSY</b>			S1-S3		
<b>SEMICONDUCTORS</b> IC107 Q111,Q112 Q113 D101,D102		LA7955 2SC1740S DTC124EK MTZJ12B	<b>FG ASSY</b> <b>SEMICONDUCTORS</b>	D1	Photo interruptor GP1S51V
<b>CAPACITORS</b> C137,C141,C145,C149 C139,C143,C147,C151 C133,C134,C138,C140,C142 C144,C146,C148,C150,C152 C159,C160		CCSQCH101J50 CCSQCH221J50 CEAS100M50 CEAS100M50 CEAS100M50	<b>OTHERS</b> J64	HOUSING ASS'Y(3P)	VKP2024
C155 C153,C154 C131,C162,C163 C132,C157,C161 C158		CEAS470M16 CEAS471M10 CEJA100M16 CKSQYF103Z50 CKSQYF473Z25	<b>POWER SUPPLY ASSY</b> <b>OTHERS</b>		
<b>RESISTORS</b> △ R169,R170 (47,1/6W) R160,R164		DCN1003 RD1/6PM471J	Q27,Q30,Q32,Q34,Q36 Q20,Q22 Q24 Q25,Q29,Q31 Q21,Q23  Q26 Thyristor D25-D27,D30,D31 Q35 Q28  Q33 Q37,Q38 D28 D29 D23  D21,D22,D24 IC21 R22-R25 (47,1/6W) R56 (15,1/4W) R61 (2.7,1/2W)  L20		2SA933S 2SB1134 2SB1331 2SC1740S 2SD1667  2SD2395 3P4J AG01Z-VO DTA114ES DTA114TS  DTC114ES DTC114TS MTZJ39B/C MTZJ7.5A RK46  S3L20U UPC358C VCN1033 VCN1034 VCN1037  VTL1008



# Service Manual

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CD CDV LD PLAYER

# CLD-2950

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## CHAPTER 2

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#### CHAPTER 2

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**PIONEER ELECTRONIC [EUROPE] N.V.** Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium  
**PIONEER ELECTRONICS AUSTRALIA PTY. LTD.** 178-184 Boundary Road, Braeside, Victoria 3195, Australia TEL: [03] 580-9911  
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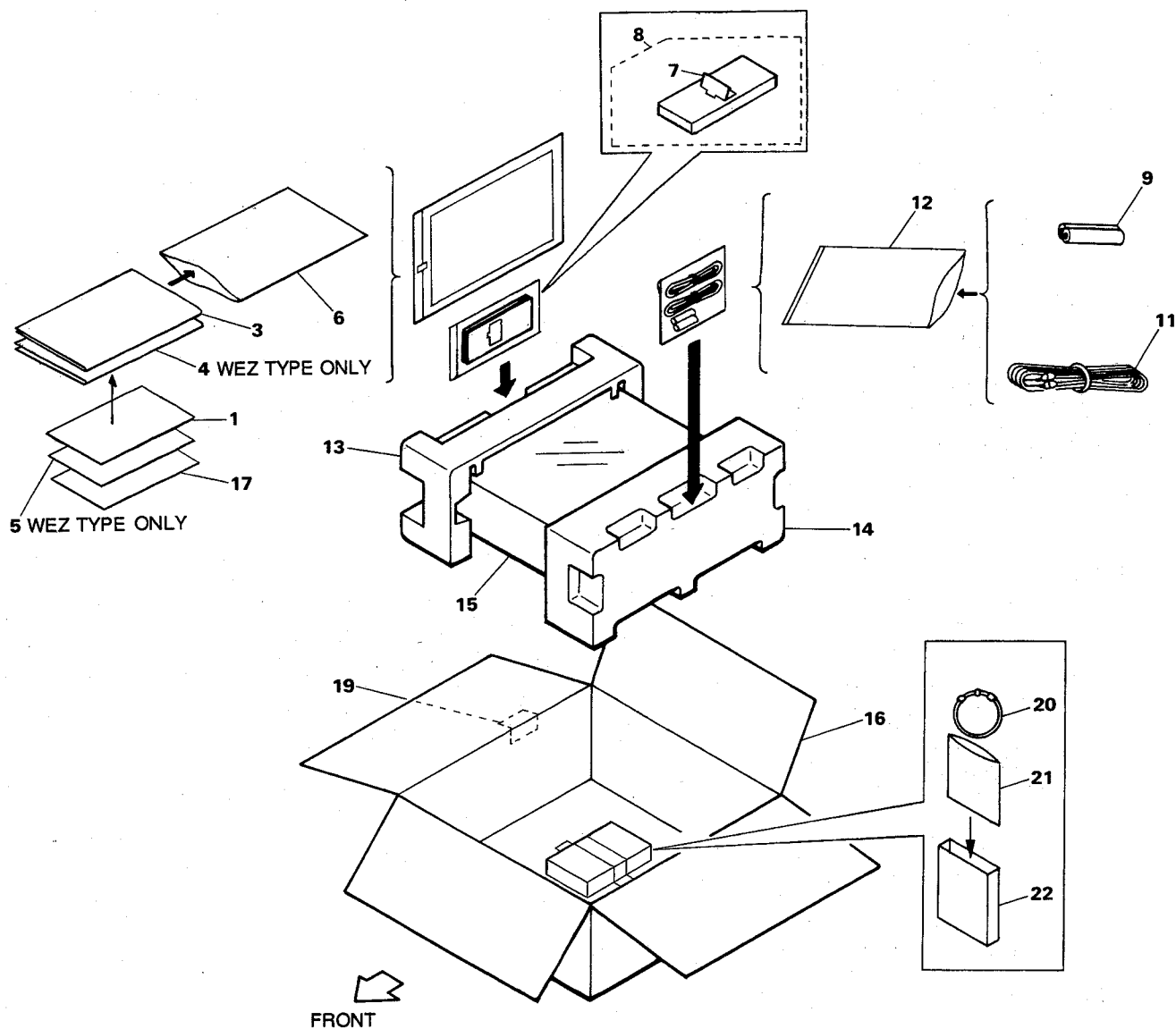
T-FFM JUNE 1994 Printed in Japan



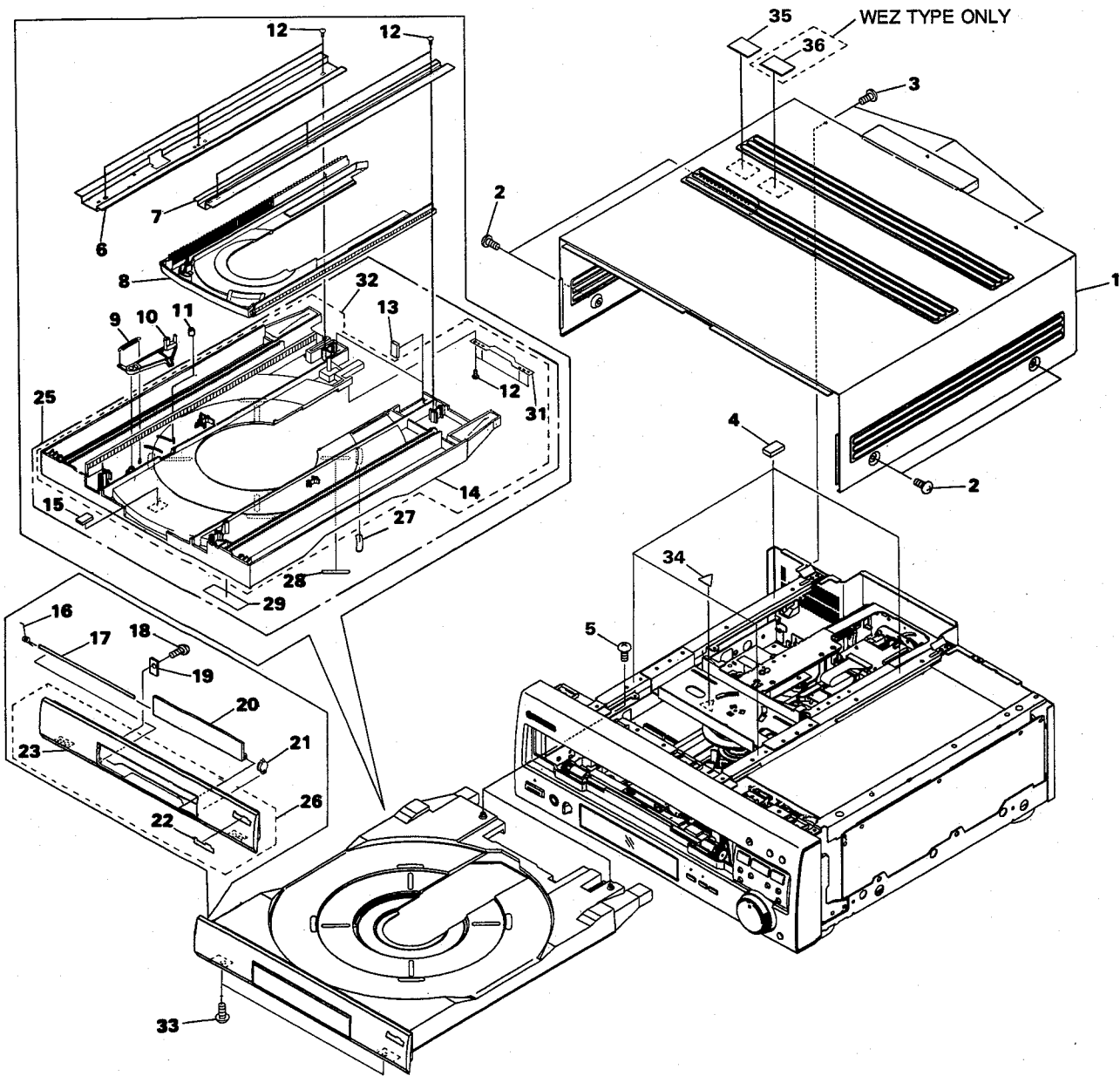


## 2.1 PACKING AND EXPLODED VIEWS

### 2.1.1 PACKING

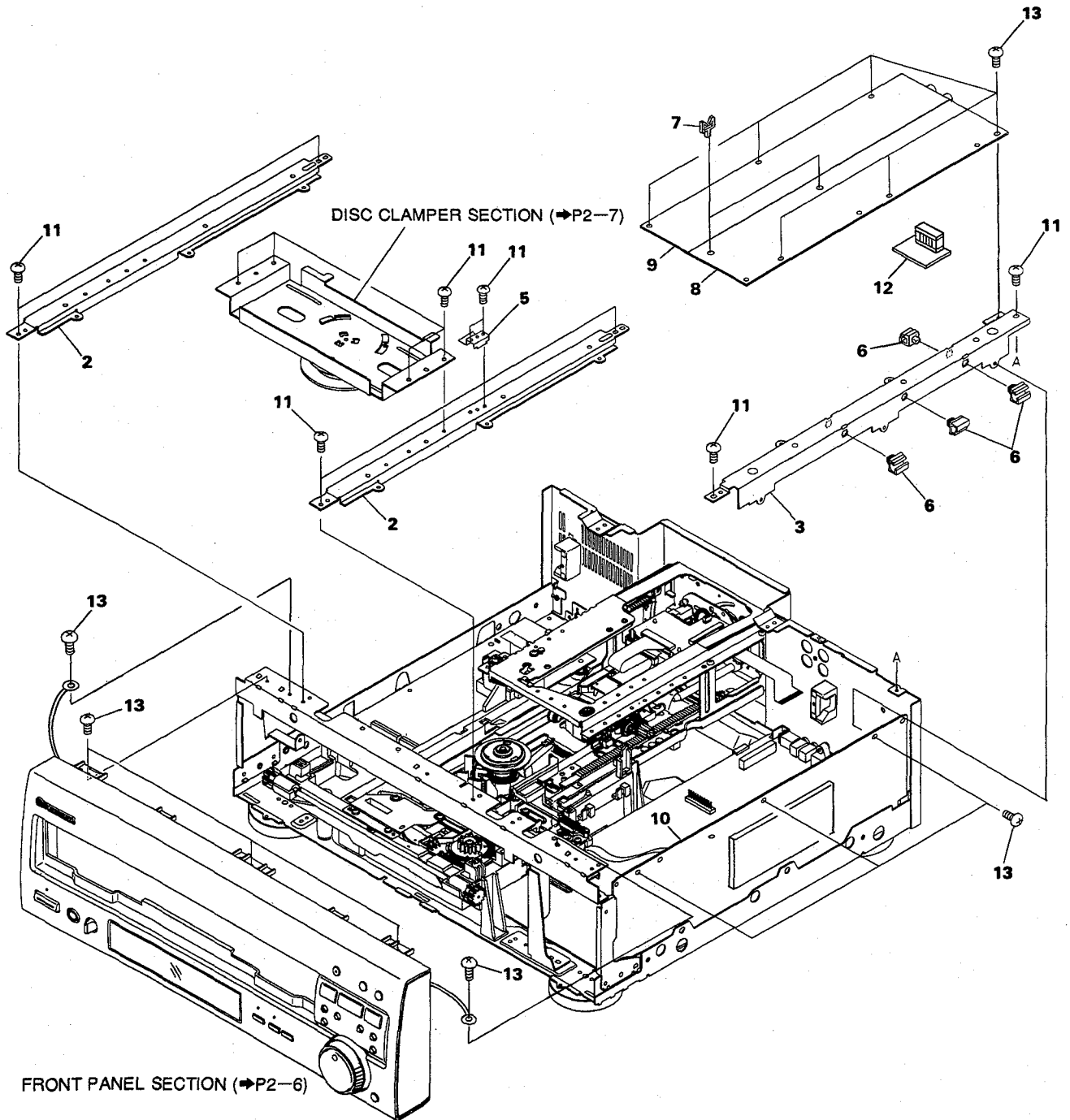


2.1.2 EXTERIOR AND DISC TRAY



**NOTE :** Screws adjacent to ▼ mark on product are used for disassembly.

2.1.3 UPPER SECTION



FRONT PANEL SECTION (→P2-6)

2.1.4 FRONT PANEL SECTION

A

A

B

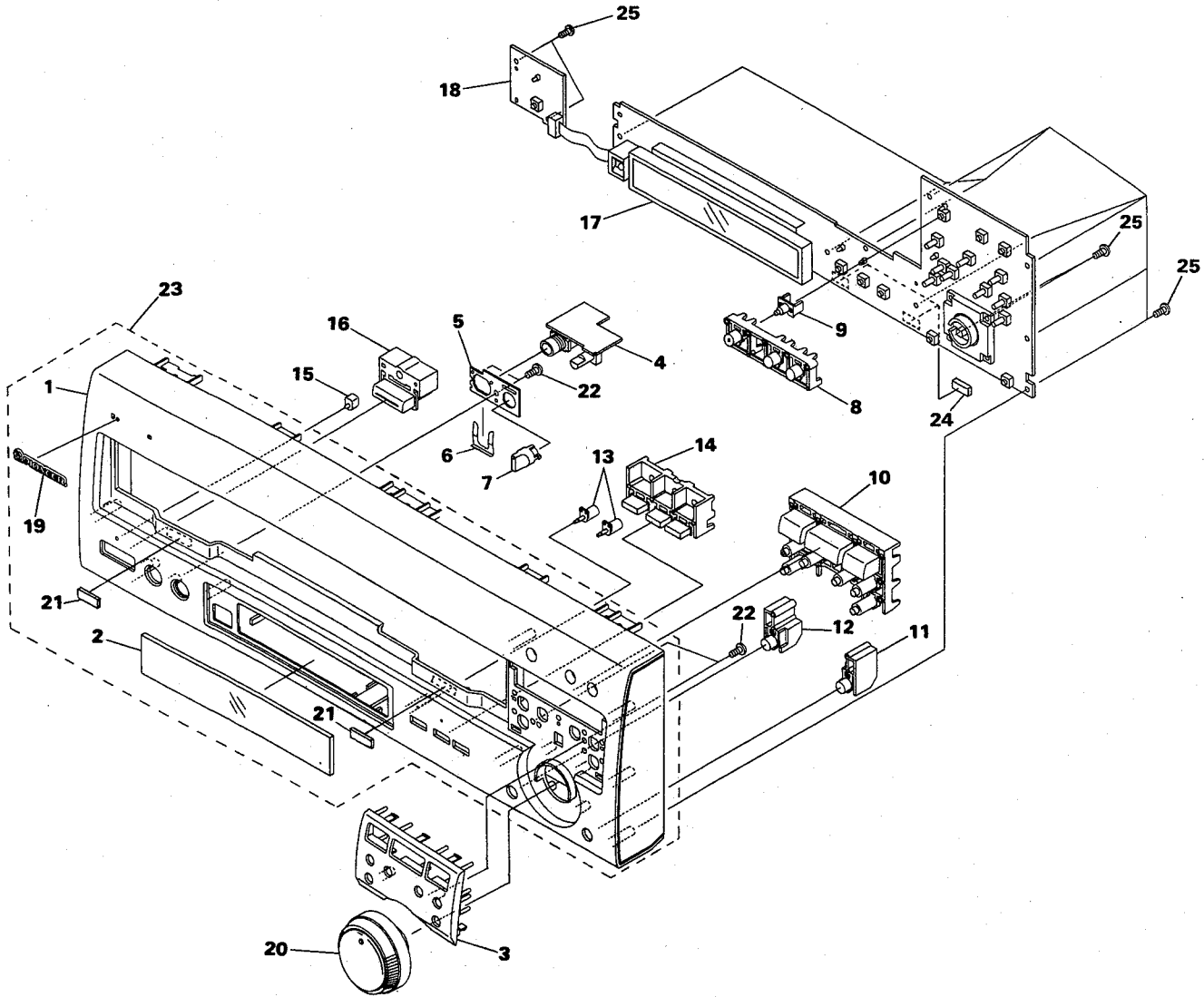
B

C

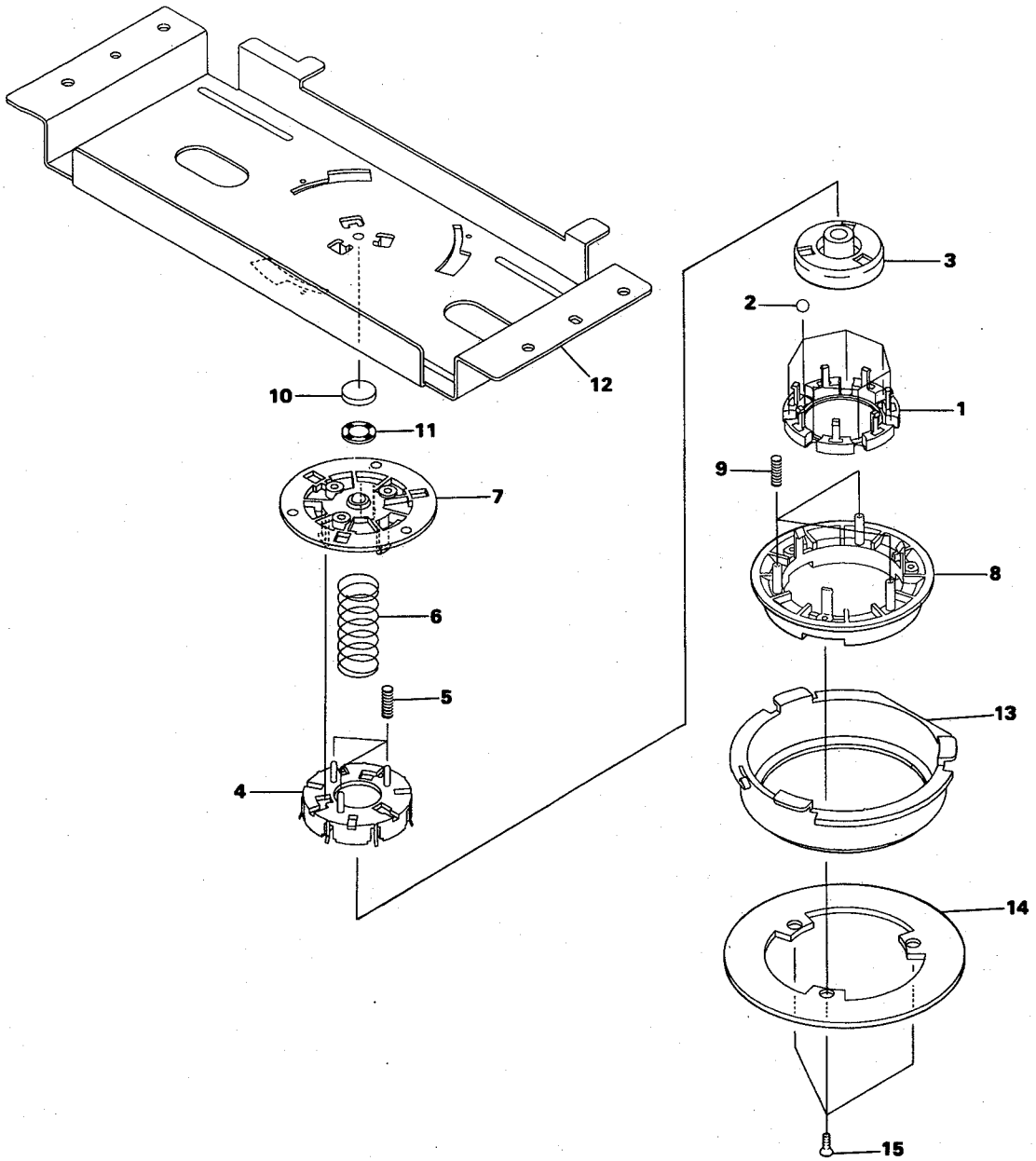
C

D

D

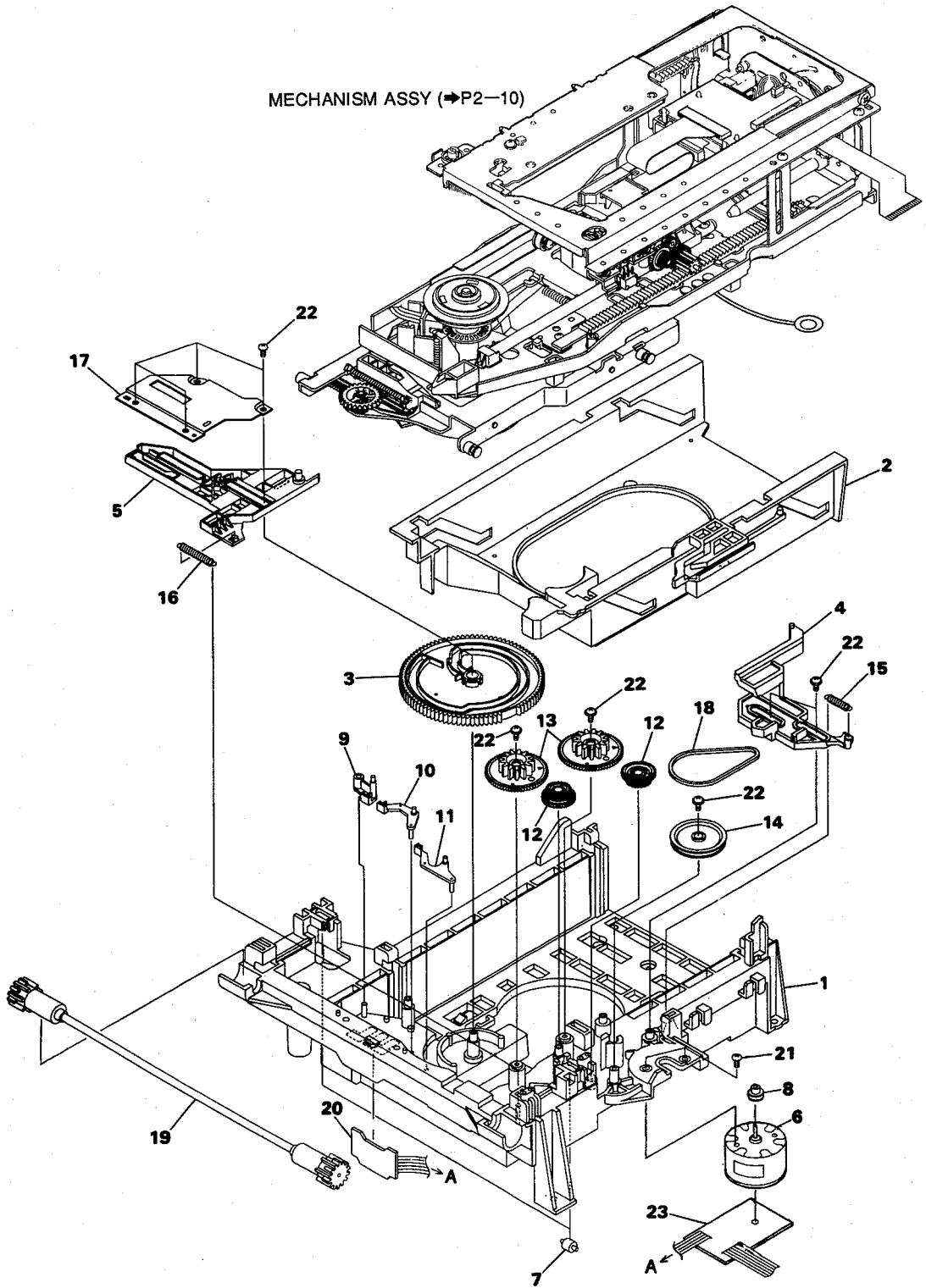


2.1.5 DISC CLAMPER SECTION





2.1.7 MECHANISM SECTION



1

2

A

B

C

D

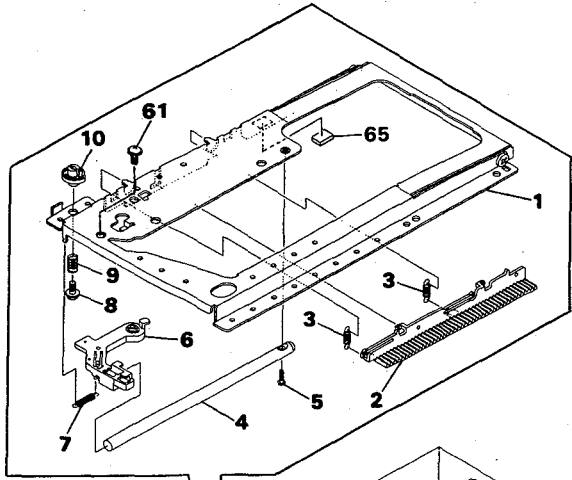
1

2

3

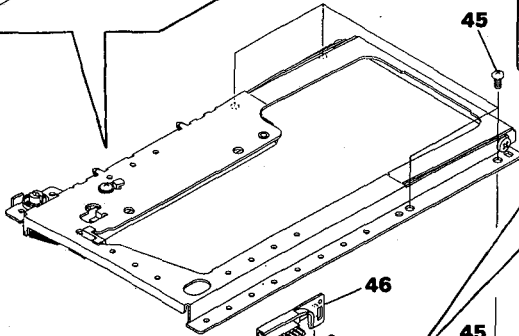
2.1.8 MECHANISM ASSY

A



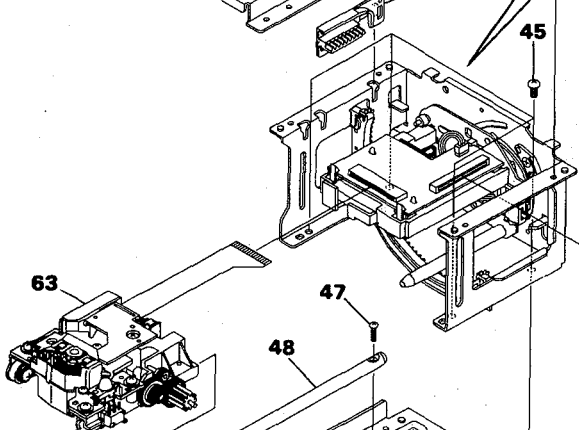
A

B



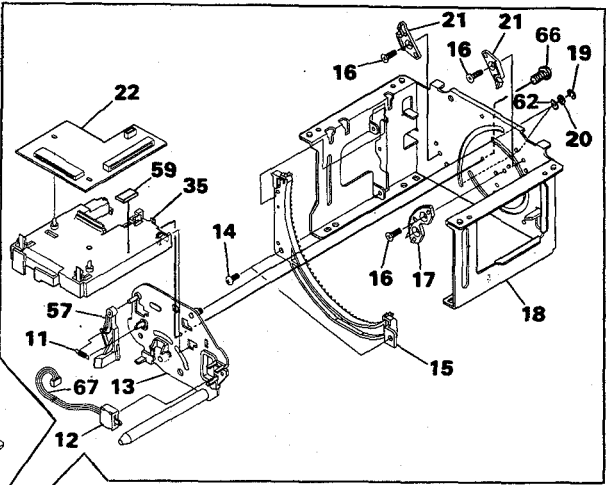
B

C



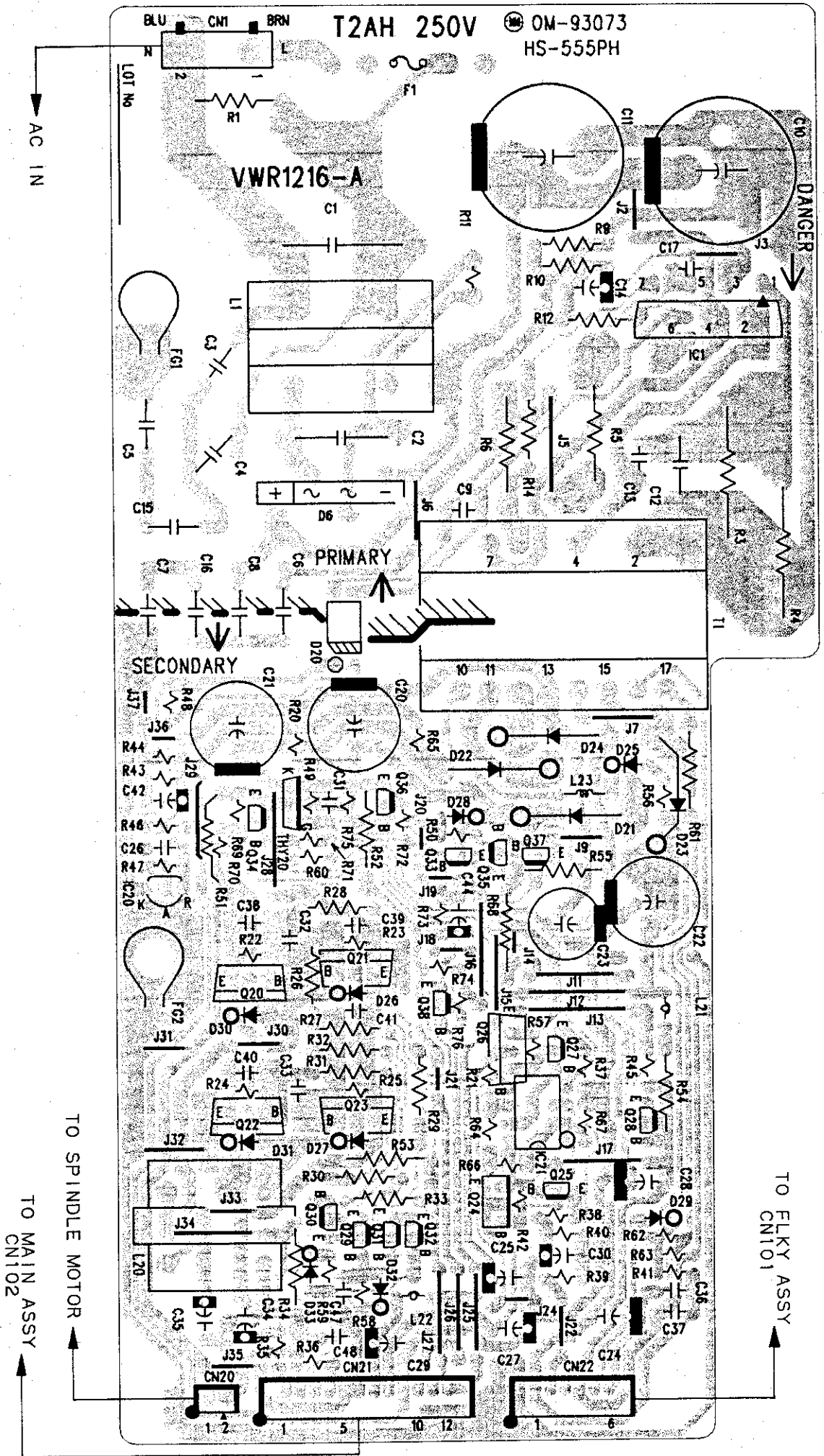
C

D



D





POWER SUPPLY ASSY

● This diagram is viewed from the mounted parts side.

PCB-2

- |     |     |      |
|-----|-----|------|
| Q37 | Q38 | IC21 |
| Q36 | Q21 | Q28  |
| Q35 | Q27 | Q23  |
| Q34 | Q26 | Q22  |
|     |     | Q25  |
|     |     | Q24  |
|     |     | Q31  |
|     |     | Q30  |
|     |     | Q29  |

Q38  
Q21 Q27  
Q20 Q26

1C21  
Q28  
Q23  
Q22

Q25 Q32  
Q24 Q31  
Q30 Q29

PCB-2

S-BC9

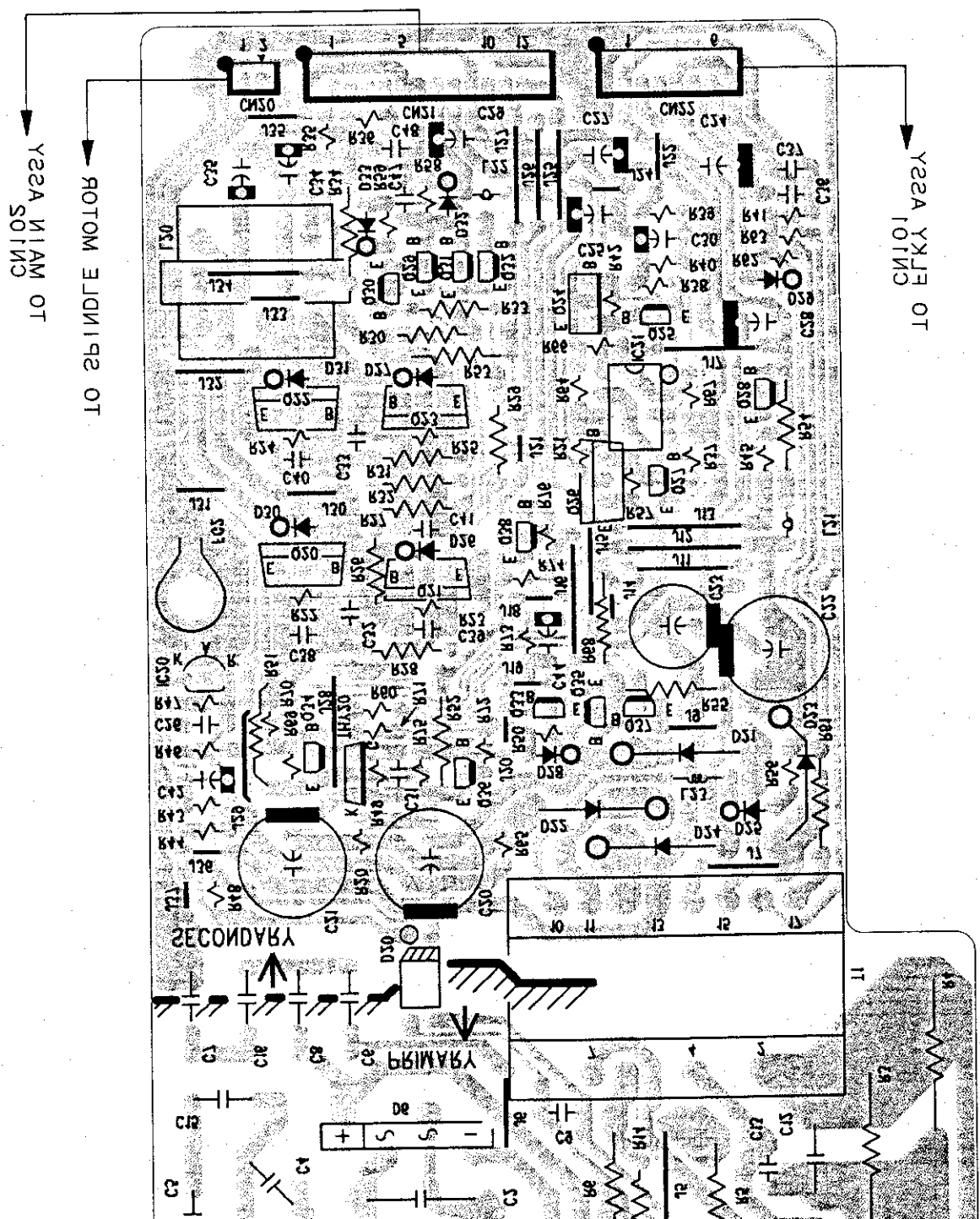
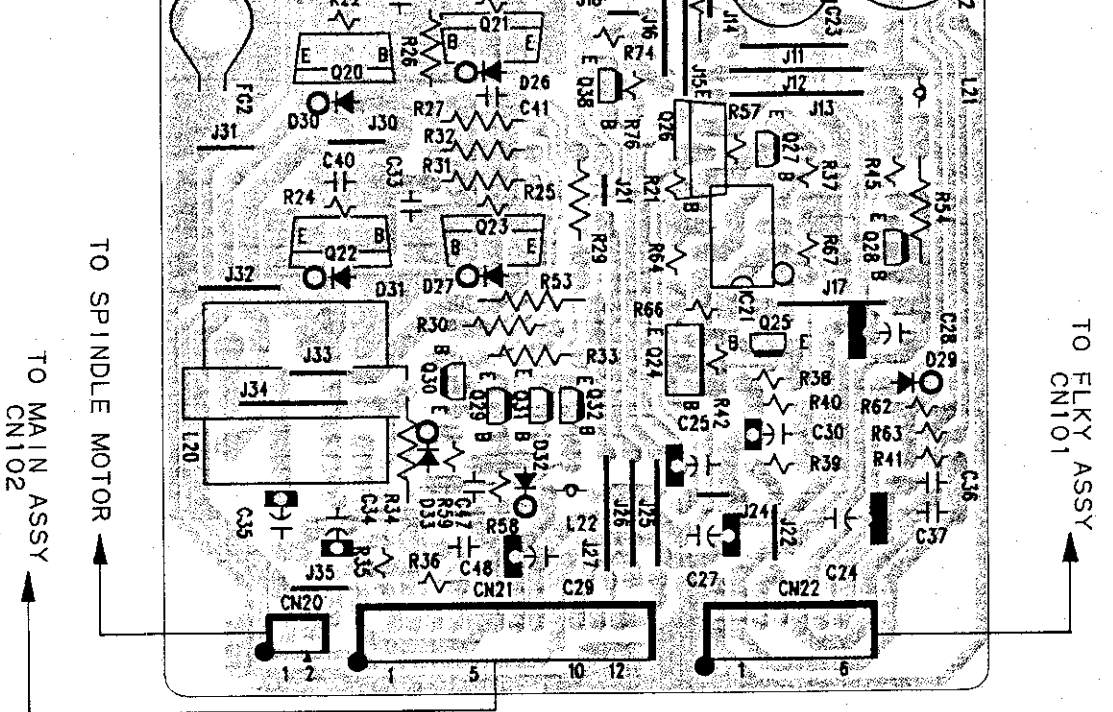
S50 S50  
E50 A50  
S50 S50

1C31  
B50  
E50  
S50

B50  
T50 T50  
S50 S50

T50  
Q50 B  
E50 A50

● This diagram is viewed from the foil side.



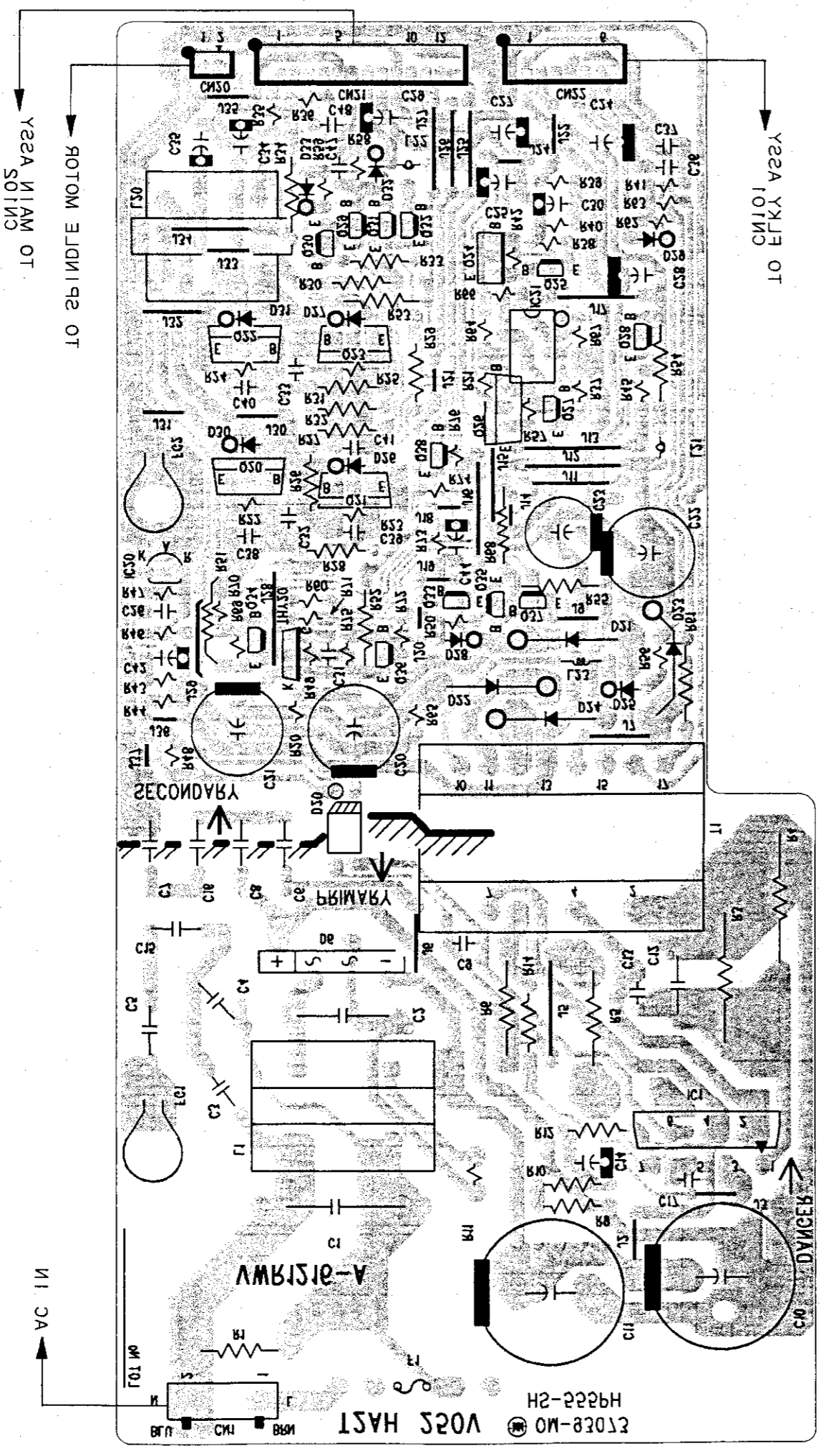
850 850  
 150 450  
 850 050  
 150 150  
 850 050  
 850 850  
 150 150  
 850 050  
 850 850  
 150 150  
 850 050

● This diagram is viewed from the foil side.

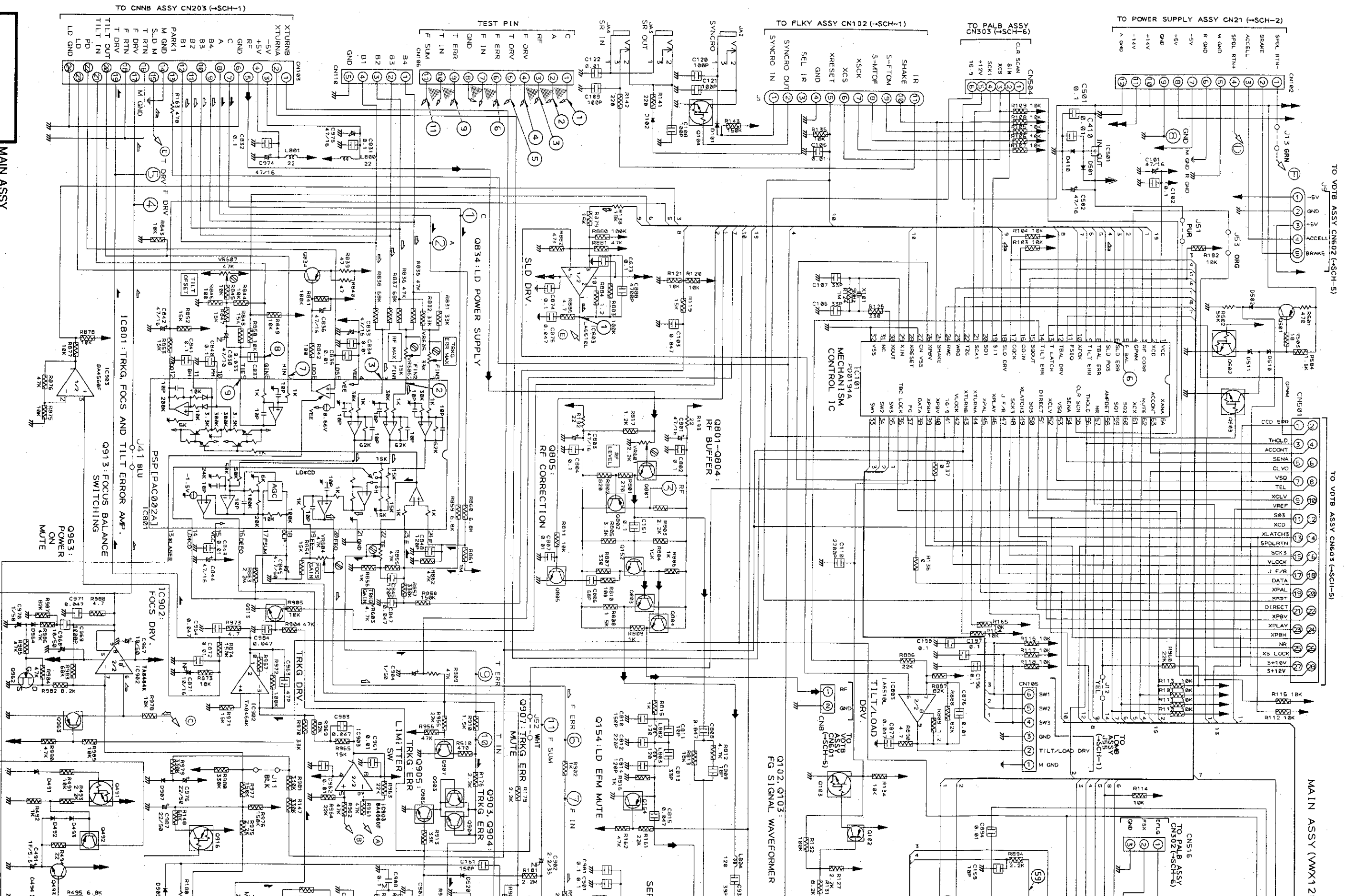
S-CB-5

Y22A YJ9Q2 REWOP

1C1



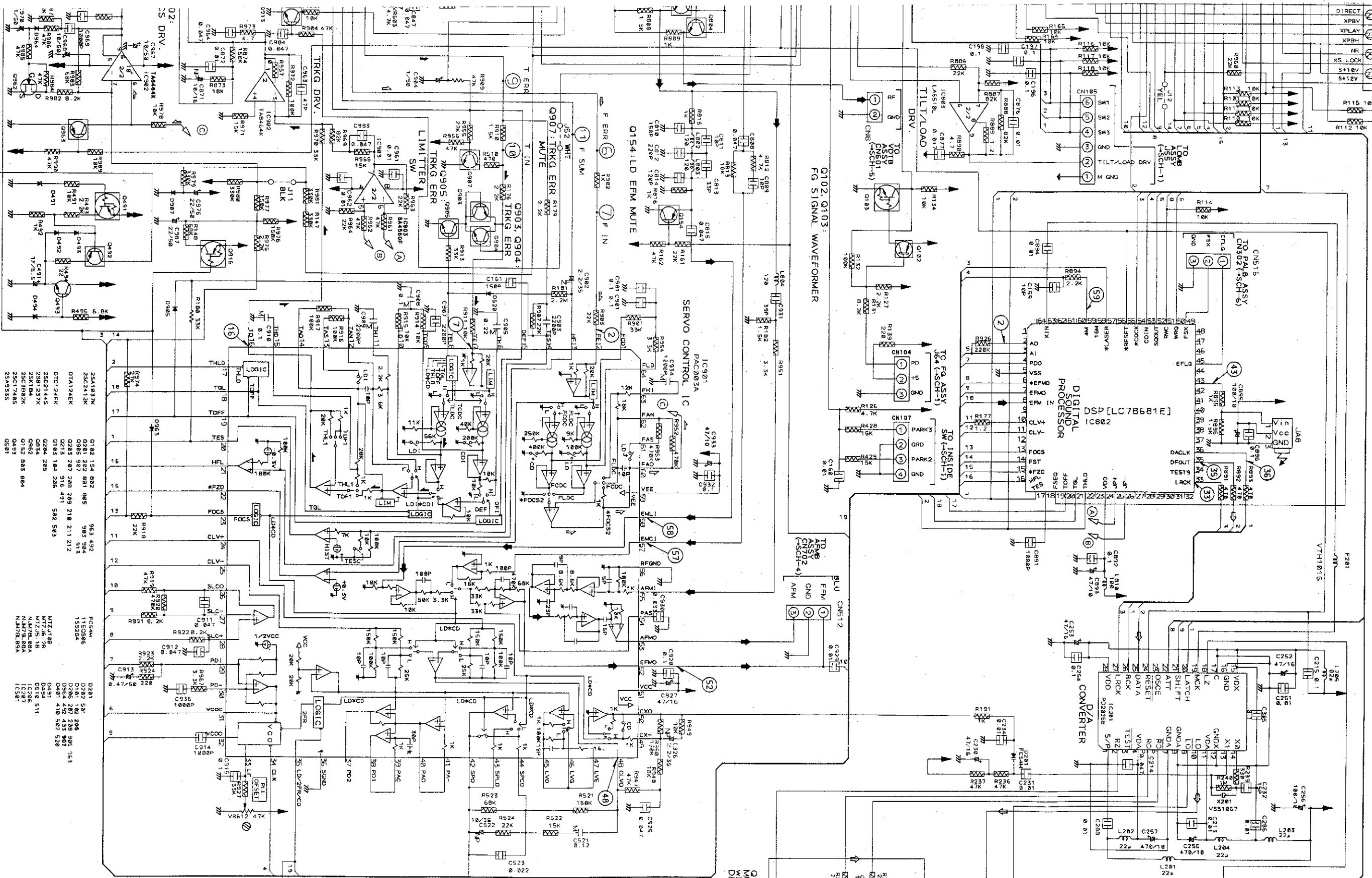
MAIN ASSY (WX1209)



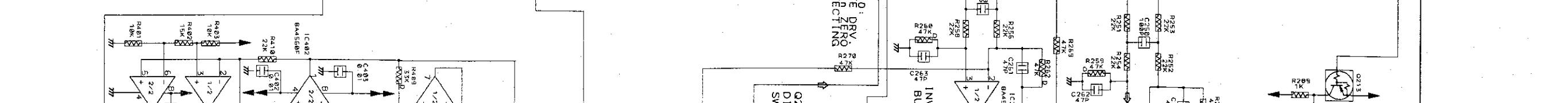
SCH-3

MAIN ASSY

MAIN ASSY (WX1 205)



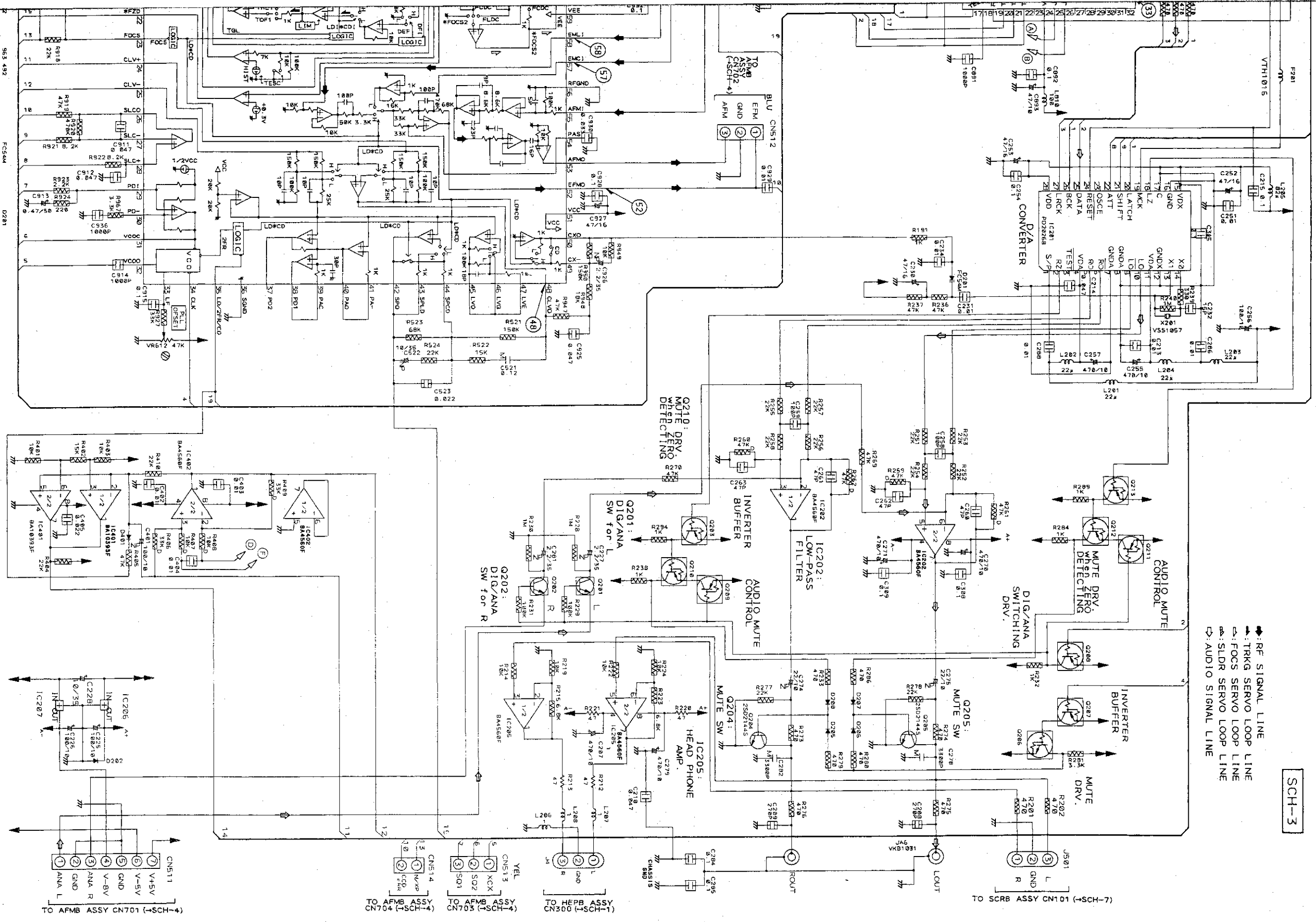
25A1837K	0183 154 882	963 492	FC54K	D281 501
25C2412K	0281 202 881 985	589 493	155284	D181 162 288 985 763
D1A124EK	0283 207 288 209 210 211 212	513		D286 287 288 985 907
07C124EK	0215 916 491	592 593		0481 410 502 528
25C2144S	0284 289			0494
25B1237K	0284 289			0518 511
25C2982K	0152 085 884			IC286
25A9335	0281			N4788 884
				IC287



Q20 DIG SW	0281 501	589 493	FC54K	D281 501
	0283 207 288 209 210 211 212	513	155284	D181 162 288 985 763
	0215 916 491	592 593		D286 287 288 985 907
	0284 289			0481 410 502 528
	0284 289			0494
	0152 085 884			0518 511
	0281			IC286
				N4788 884
				IC287

- ◆ RF SIGNAL LINE
- ▲ TRKG SERVO LOOP LINE
- △ FOCUS SERVO LOOP LINE
- ⊳ SLIDER SERVO LOOP LINE
- ⇨ AUDIO SIGNAL LINE

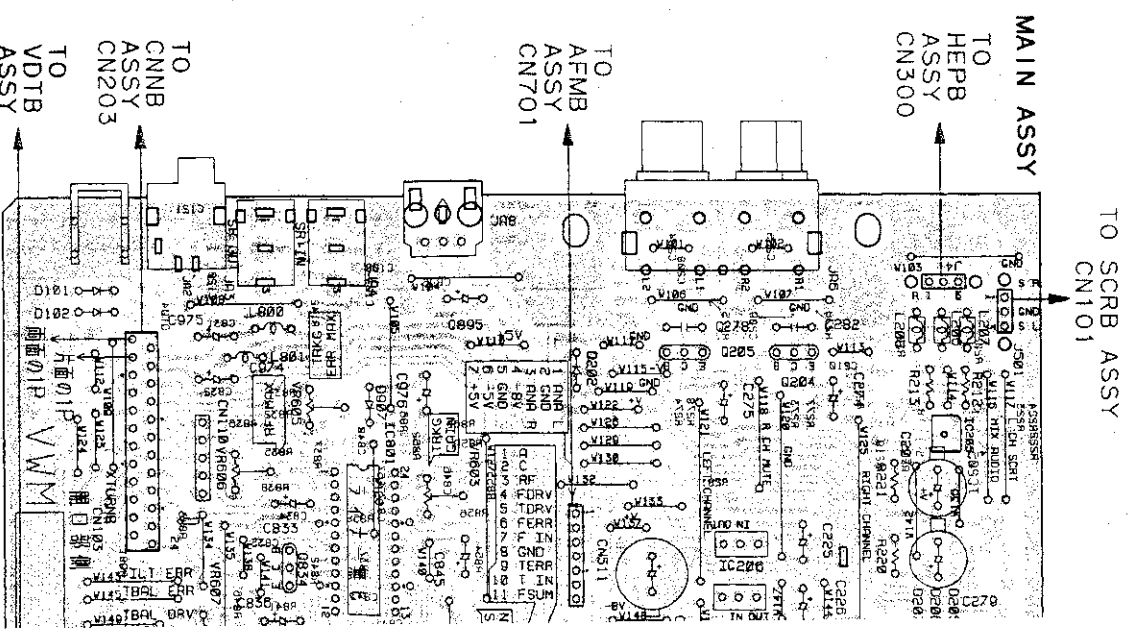
SCH-3



SCH-3

MAIN ASSY

SCH-3

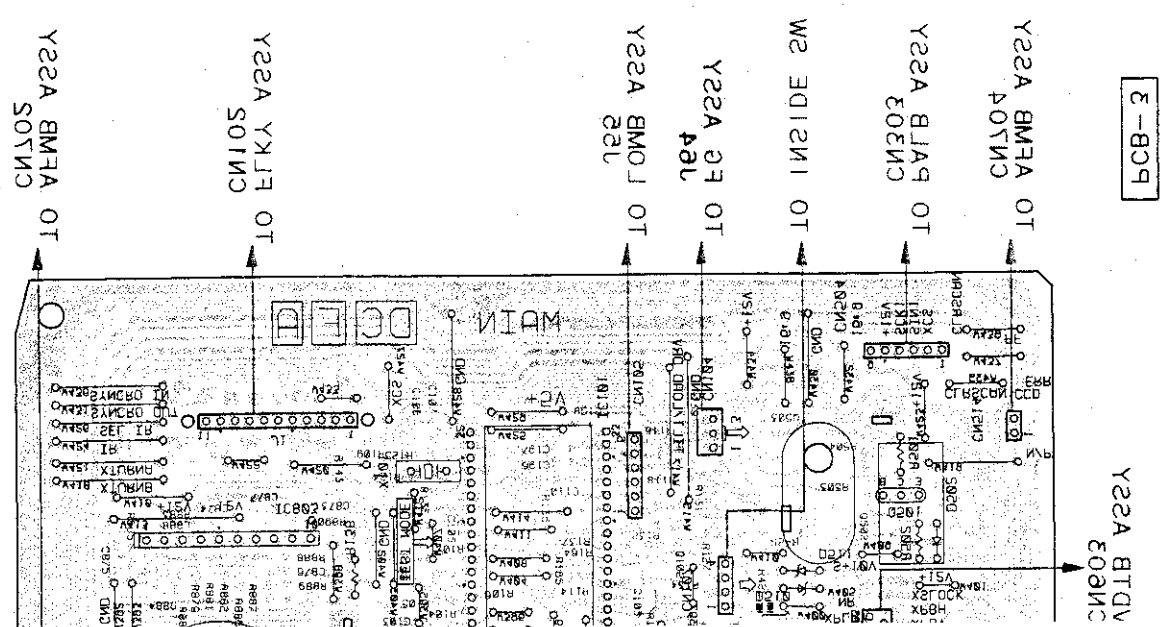


**MAIN ASSEMBLY**

Note: No. in the table correspond to the pin number.

Measurement condition: In case when (D audio) is written, at time when disc has digital audio recording is played.

IC801(PAC002A)	IC802(LC78681E)	IC803(LA6510L)	IC901(PAC003A)	CN106	IC101 (PD0194A)
②, ③ 1ms/Div. 16mVp-p	② 0.1s/Div. 4.3Vp-p	① 2ms/Div. 1.8Vp-p	② 0.2ms/Div. 74mVp-p	①, ② 5ms/Div. 65mVp-p	⑥ 1V/Div 5ms/Div approx. 1.8V
AC mode	AC mode(D audio)	DC mode	DC mode	DC mode	DC mode (Sldr err)
⑦, ⑧ 1ms/Div. 67mVp-p	③⑧ 10μs/Div. 4.2Vp-p	⑦ 0.2ms/Div. 74mVp-p	⑦ 0.2ms/Div. 74mVp-p	③ 0.5ms/Div. 300mVp-p	
DC mode	AC mode(D audio)	DC mode	DC mode	AC mode	
⑨ 5ms/Div. 0.1Vp-p	③⑤ 0.2s/Div. 4.4Vp-p	④ 0.2ms/Div. 0.6Vp-p	④ 0.2ms/Div. 0.6Vp-p	④ 5ms/Div. 150Vp-p	
DC mode	AC mode(D audio)	DC mode	DC mode	DC mode	
	③⑥ 0.2s/Div. 4.5Vp-p	⑤ 50μs/Div. 6.2Vp-p	⑤ 50μs/Div. 6.2Vp-p	⑤ 5ms/Div. 3.5Vp-p	
	④⑨ 0.1s/Div. 4.5Vp-p	⑥ 0.2s/Div. 2.1Vp-p	⑥ 0.2s/Div. 2.1Vp-p	⑥ 5ms/Div. 1.25Vp-p	
	⑤⑨ 0.1s/Div. 2Vp-p	⑦ 1ms/Div. 0.55Vp-p	⑦ 1ms/Div. 0.55Vp-p	⑦ 5ms/Div. 1.25Vp-p	
	AC mode(D audio)	AC mode	AC mode	DC mode	
		⑧ 0.2ms/Div. 0.32Vp-p	⑧ 0.2ms/Div. 0.32Vp-p	⑧ 10ms/Div. 1.7Vp-p	
		⑨ DC mode	⑨ DC mode	⑨ DC mode	



Q503 1020 E0831  
Q502 Q502  
Q102 Q102  
Q103 Q103



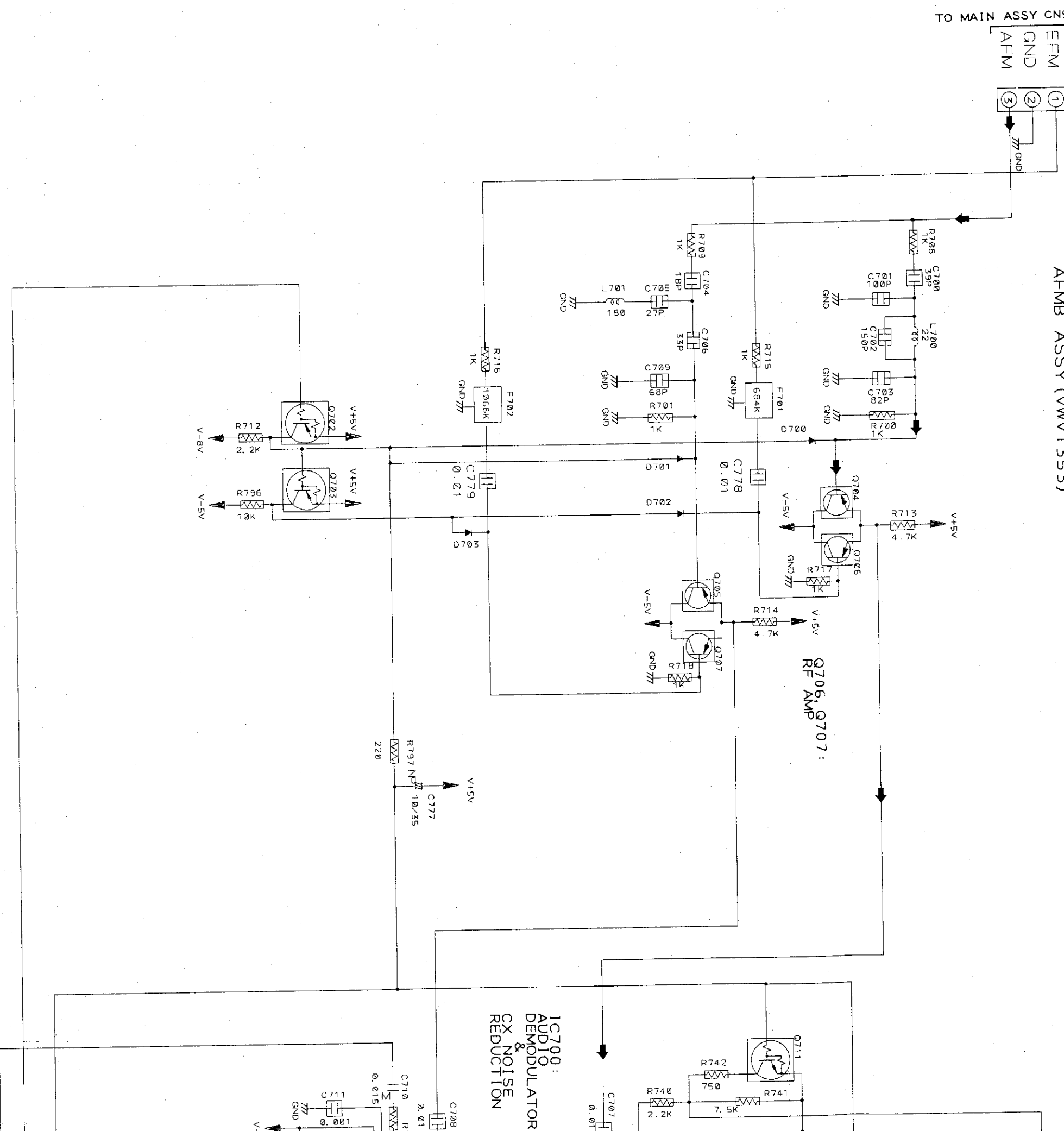


TO MAIN ASSY CN512 (→SCH-3)

BLU

CN702

AFMB ASSY (WV1353)



IC700:  
AUDIO  
DEMULATOR  
&  
NOISE  
REDUCTION

Q706, Q707:  
RF  
AMP

SCH-4

AFMB ASSY

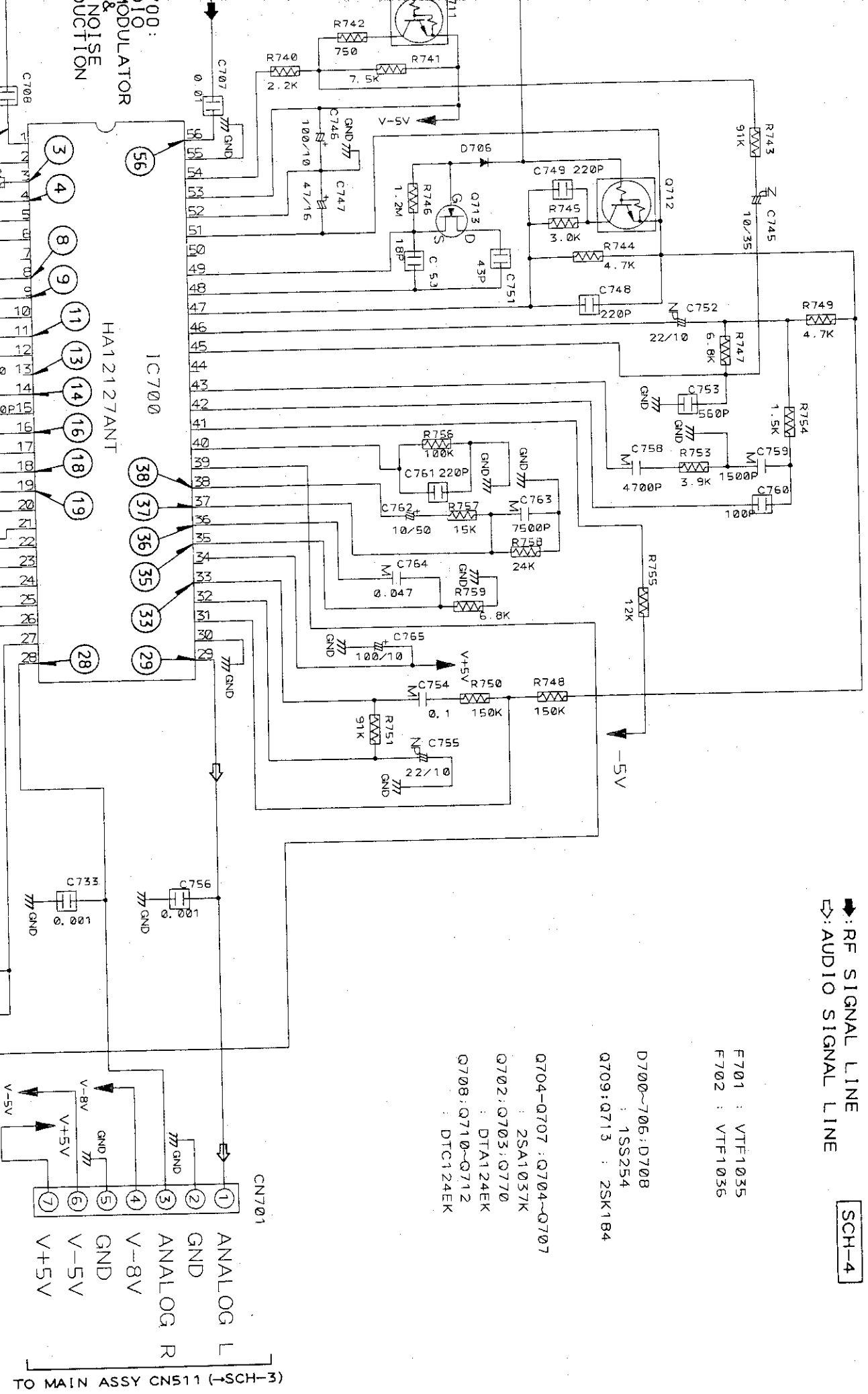
➔: RF SIGNAL LINE  
 ⇄: AUDIO SIGNAL LINE

SCH-4

F701 : VTF1035  
 F702 : VTF1036

D700~706: D708  
 : 1SS254  
 Q709: Q713 : ZSK1B4

Q704-Q707 : Q704-Q707  
 : 2SA1037K  
 Q702: Q703: Q770  
 : DTA124EK  
 Q708: Q710-Q712  
 : DTC124EK



TO MAIN ASSY CN511 (-SCH-3)

TO MAIN ASSY  
 CN514 (-SCH-3)

TO MAIN ASSY  
 CN513 (-SCH-3)

CN704  
 ① N/XP  
 ② CCDERR  
 ① XCX  
 ② SQ2  
 ③ SQ1

CN703 YEL

AFMB ASSY

SCH-4

A

B

C

D

E

F

AFMB ASSEMBLY

• IC700 (HA12127ANT) Note : (No.) in the table correspond to the pin No.

①  150mV-p	⑩  0.6V-p	⑮  100mV-p	③③  0.15V-p	⑤⑤  150mV-p
③  100mV-p CCD ERROR	⑪  0.7V-p	⑱  100mV-p	③⑤  1ms 1V-p	
④  2V-p	⑫  0.4V-p	⑳  1ms 1.5V-p	③⑦  1ms 0.6V-p	
⑧  2V-p	⑬  1.0V-p	㉔  1ms 1.5V-p	③⑧  100mV-p	
⑨  2V-p	⑭  1.0V-p	②⑨  1ms 1.5V-p		

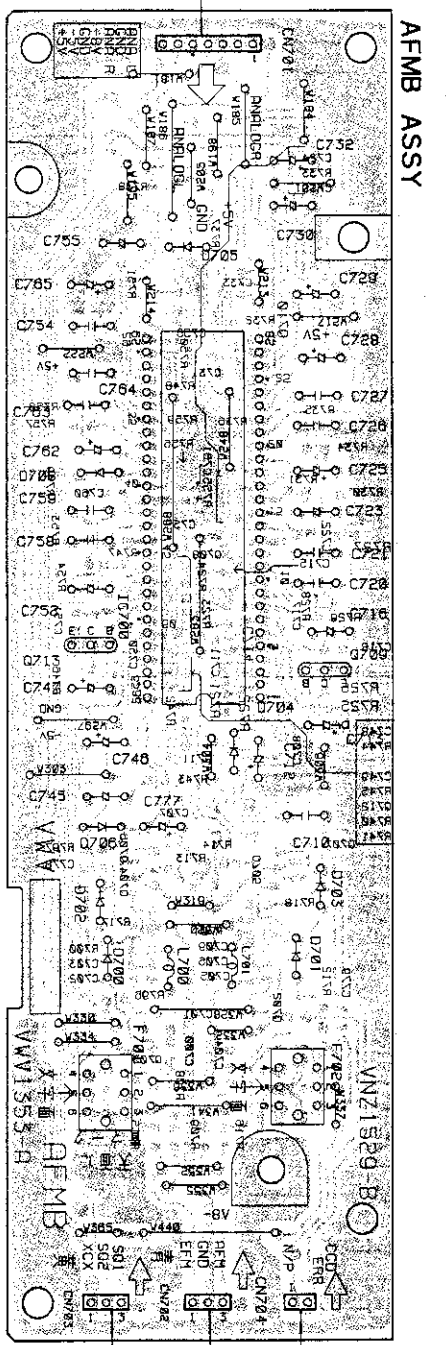
TO MAIN ASSY  
CN511

△-BC9

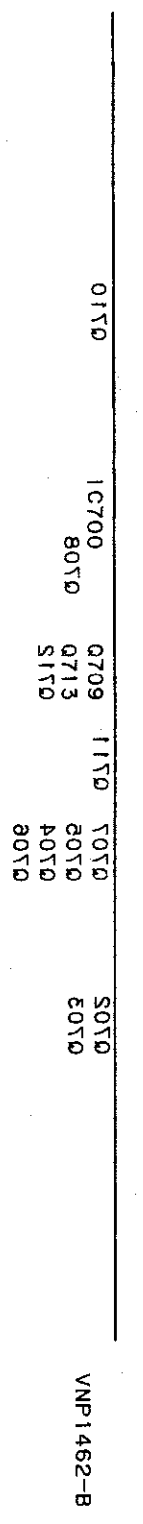
Y22A NIAM OT  
 △121C  
 Y22A NIAM OT  
 △121C  
 Y22A NIAM OT  
 △121C

B-S9419W

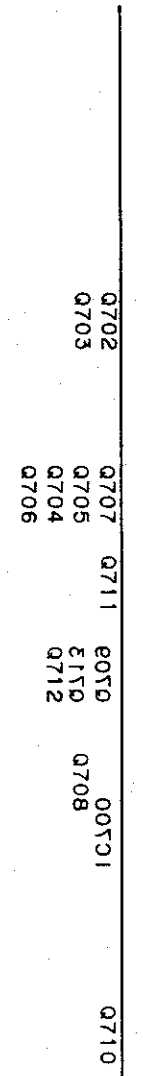
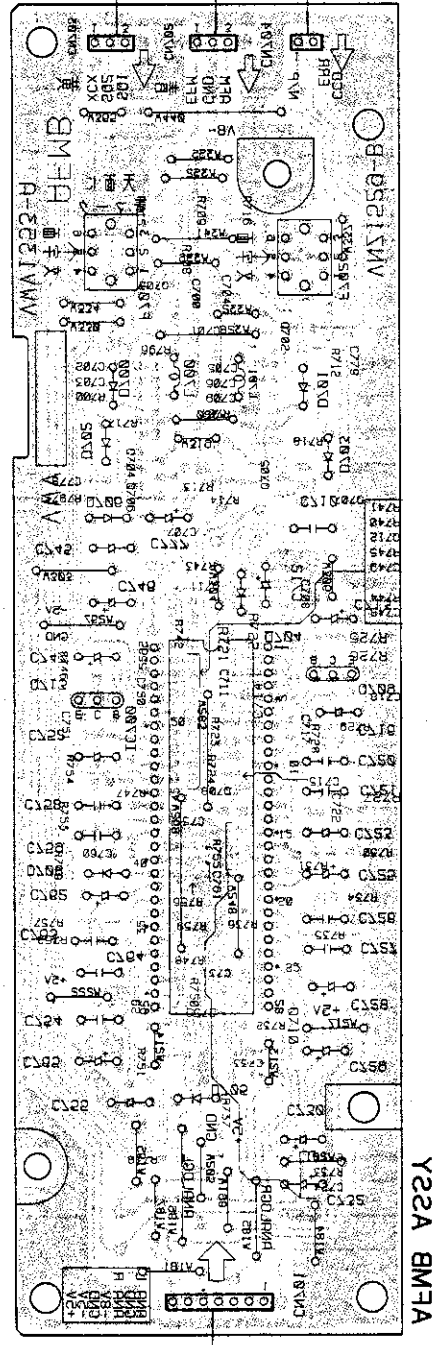
1 2 3 4 5



● This diagram is viewed from the mounted parts side.



● This diagram is viewed from the foil side.

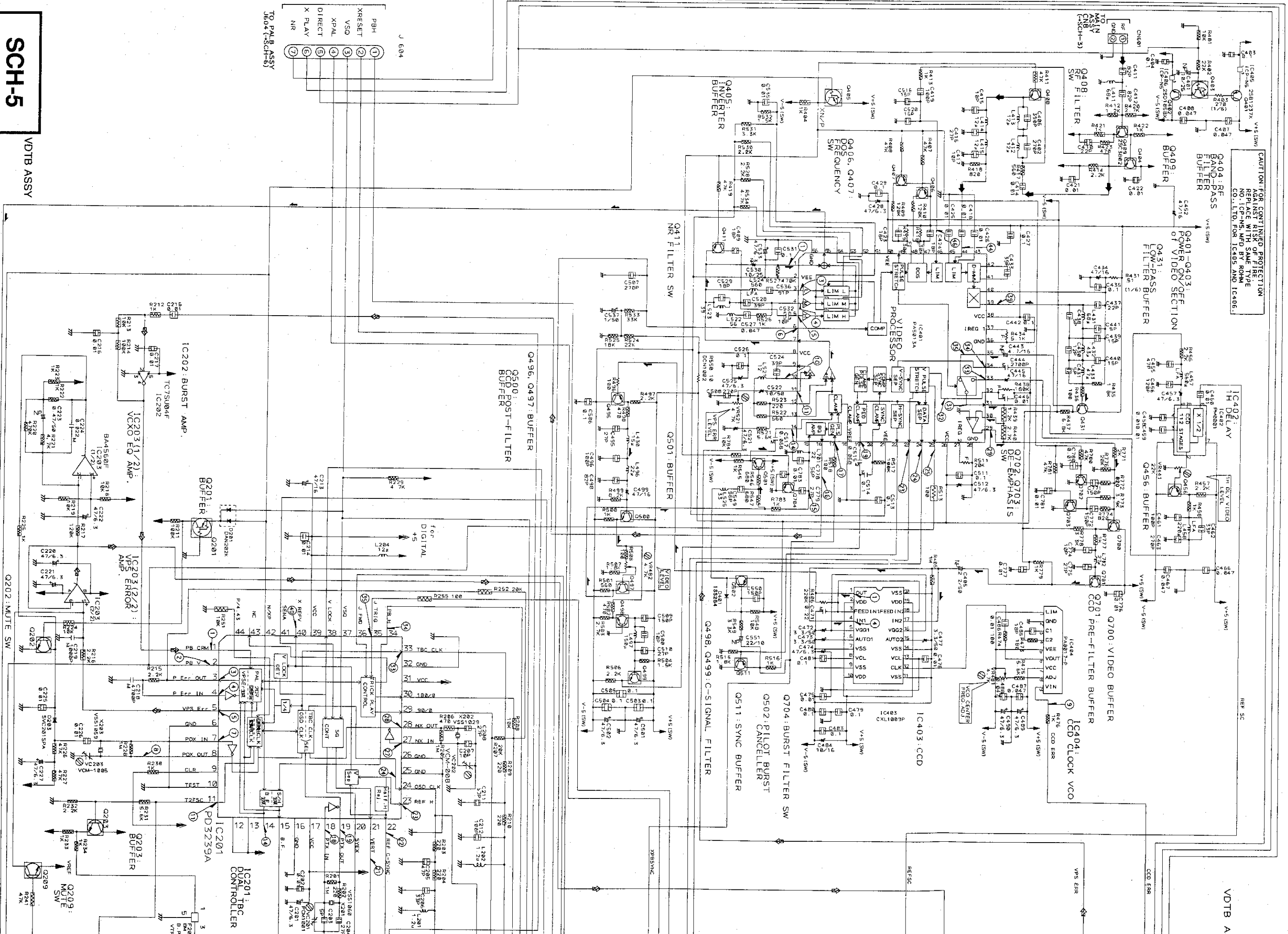


4-B039

Y22A NIAM OT  
Y22A NIAM OT  
Y22A NIAM OT  
Y22A NIAM OT

B-S94191V

CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE WITH SAME TYPE NO. I.C.-MS MFD BY ROHM CO., LTD. FOR IC405 AND IC406.



- J 604
- ① PBH
  - ② XRESET
  - ③ VSO
  - ④ XPAL
  - ⑤ DIRECT
  - ⑥ PLAY
  - ⑦ NR
- TO PALB ASSY  
J604 (-5CH-6)

**SCH-5**

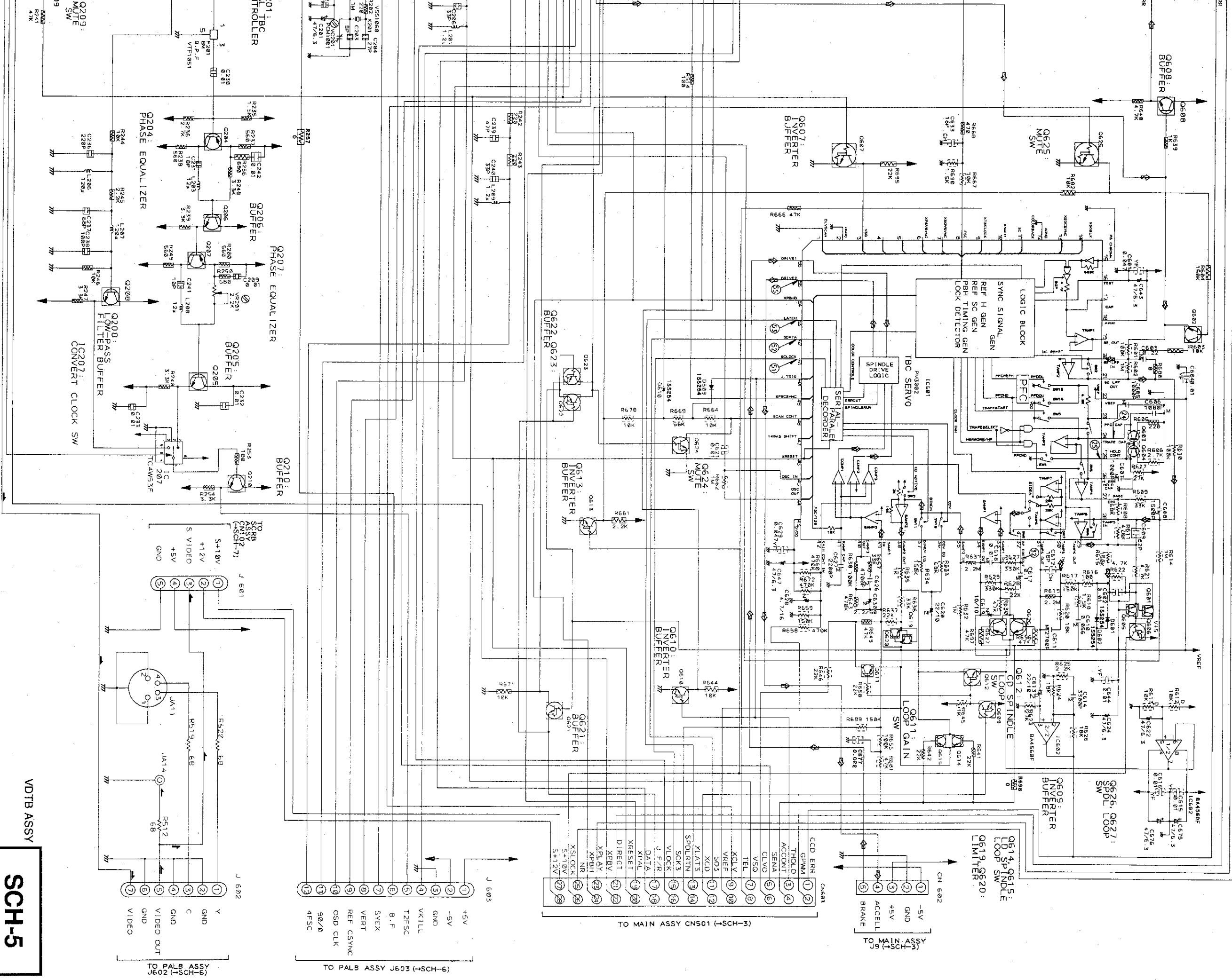
VDTB ASSY

DTA124EK	Q201	403	405	506	508	521	522	523								
25C2412K	Q202	203	205	206	208	209	210	404	408	497	498					
Q499	500	501	601	602	603	604	605	606	614	619						
Q620	526	700	701	702	406	407	411	456	496	502	511	611	615	627	703	704
25A1037K	Q204	207	406	407	411	456	496	502	511	611	615	627	703	704		
25B1231X	Q401															
25C1382X	Q402															
25C1382X	Q403															
25C1740S	Q431															
DTC1344EK	Q607	610	612	613	624	625										

Q602: TBC GAIN SWITCHING  
 Q603, Q604: TRAPEZOID WAVEFORMER  
 Q605, Q606: TBC ERROR DETECTOR  
 IC602(1/2): REFERENCE VOLTAGE BUFFER  
 IC602(2/2): CCD ERROR AMP

RF SIGNAL LINE  
 VIDEO SIGNAL LINE  
 SPINDLE SERVO LOOP LINE

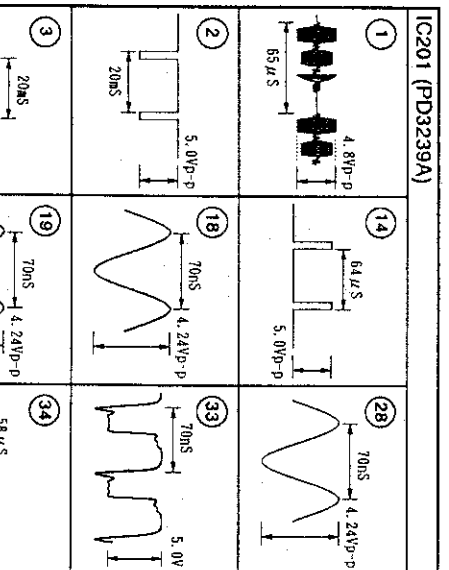
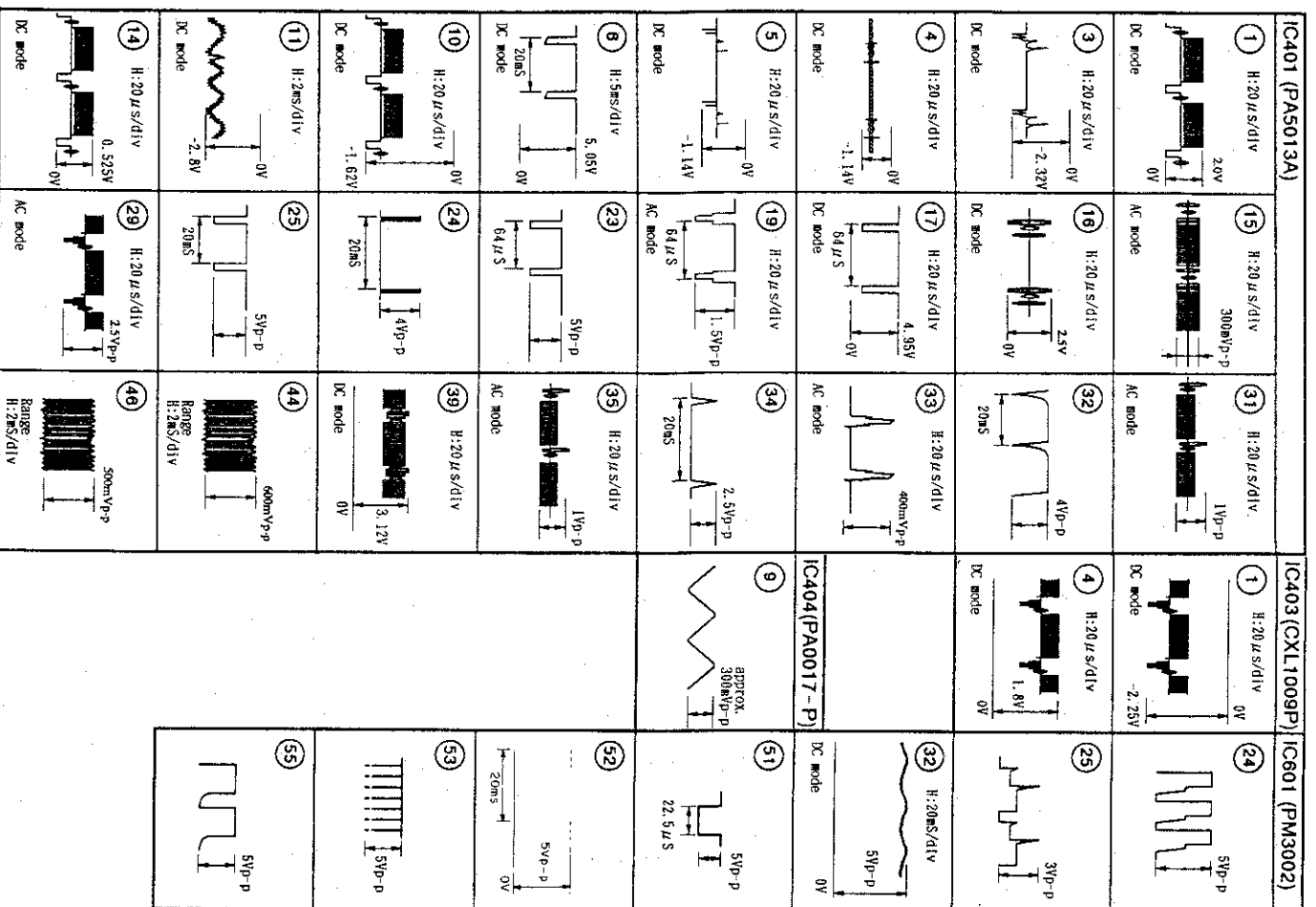
SCH-5



VDTB ASSY  
 SCH-5

**VDTB ASSEMBLY**

Note: (No) in the table correspond to the pin number.

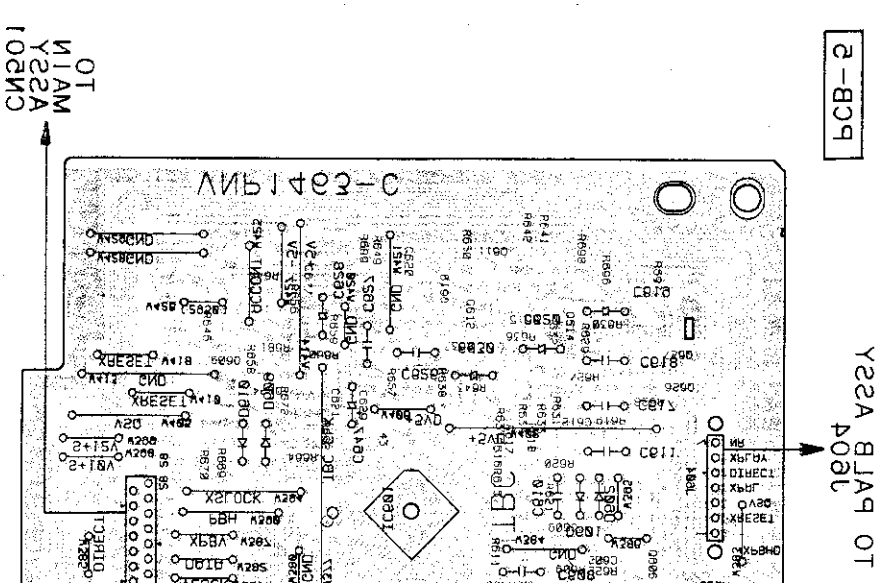
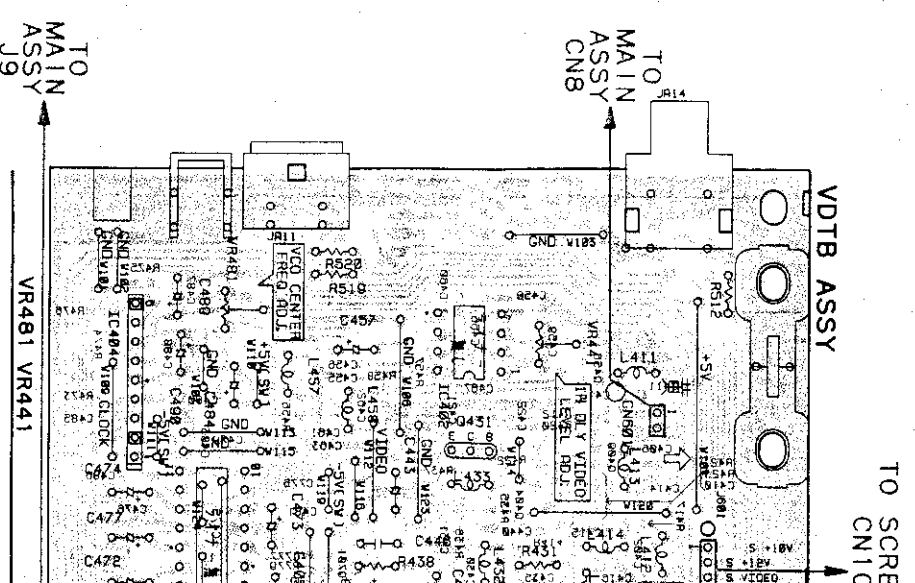


Note: These waveforms and voltage are in the PAL DISC playback.

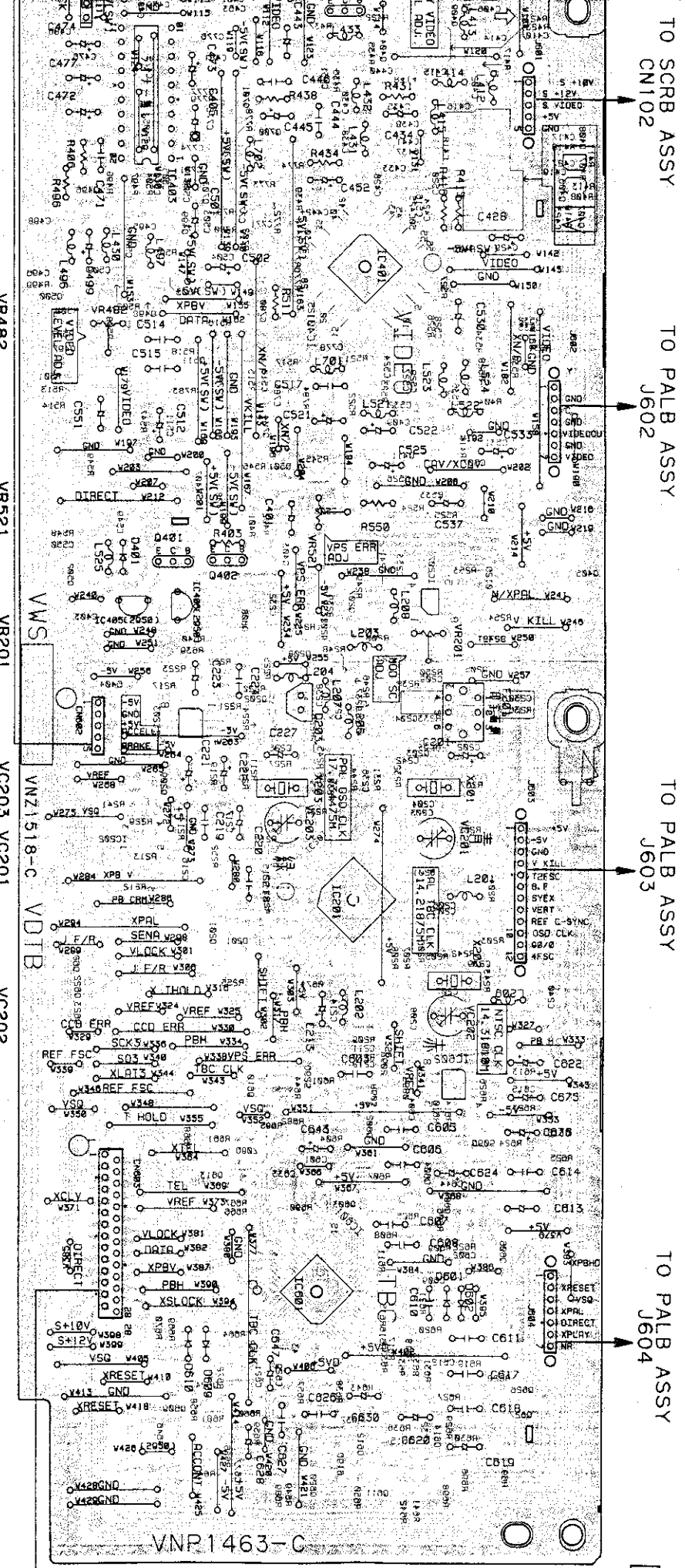
• IC201 (PD3239A)

Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	*	12	5.0	23	*	34	*		
2	*	13	5.0	24	*	35	*		
3	*	14	*	25	0	36	5.0		
4	*	15	5.0	26	0	37	5.0		
5	*	16	0	27	*	38	5.0		
6	0	17	5.0	28	*	39	5.0		
7	*	18	*	29	5.0	40	*		
8	*	19	*	30	5.0	41	0		
9	5.0	20	5.0	31	5.0	42	0		
10	0	21	*	32	0	43	5.0		
11	*	22	*	33	*	44	5.0		

\*: Refer to waveforms



● This diagram is viewed from the mounted parts side.



TO SCRIB ASSY  
CN102

TO PALB ASSY  
J602

TO PALB ASSY  
J603

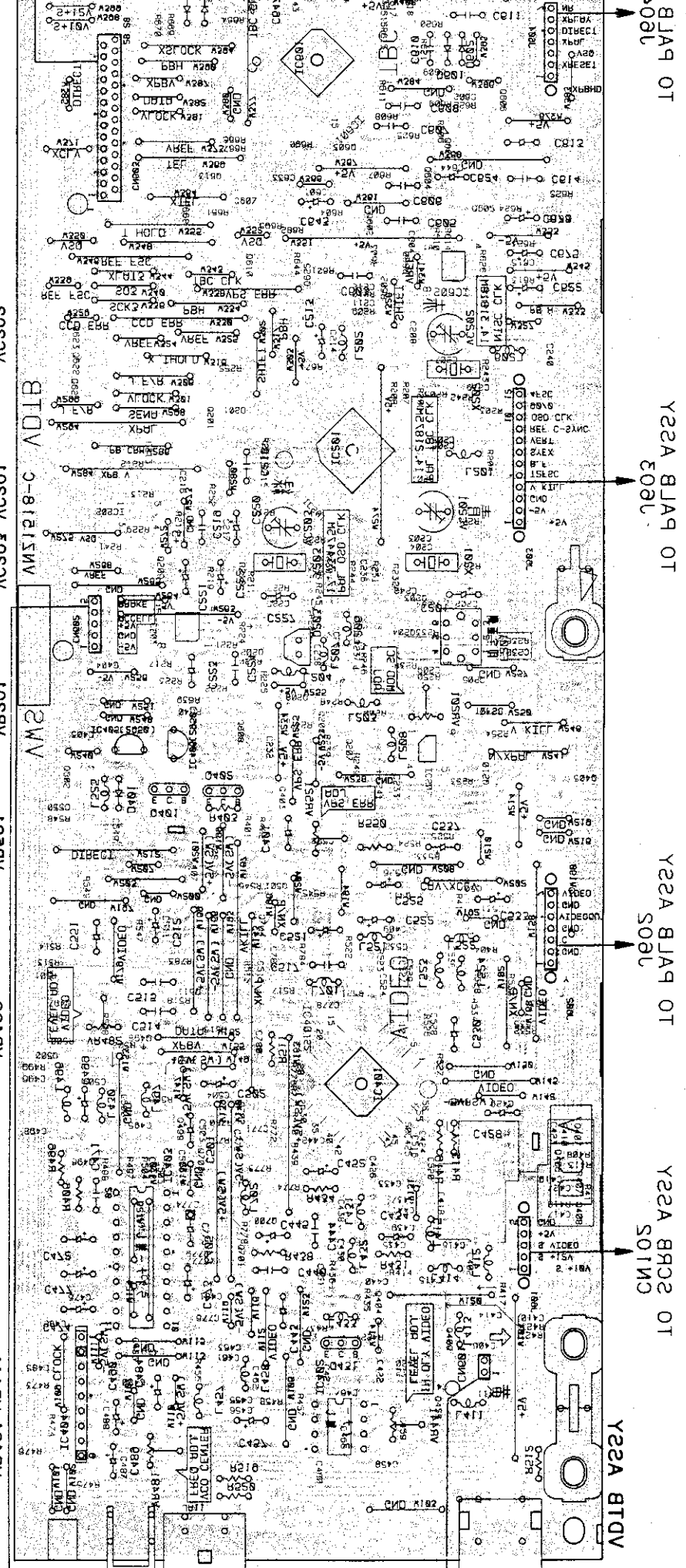
TO PALB ASSY  
J604

PCB-5

TO MAIN ASSY  
CN501

IC403	8040	EO70	10401	I130	I140	Q402	70S01	20S0	50S0	70S01	10S0	I3A0	S0301	2030	3030	10301	4S30	T330	I130
EO40	0070	2E40	8E40	7E40	1070	Q401	70S0	80S0	40S0	50S01	ES30	2S30	A030	1030	4S30	1A30	6030	A130	E130
4040	1070		S070	0030	4070	2040	EO40	8030	EO30	0130	S030	EO30	0130	T030	EO30	8S30	2130	0S30	5130
			8E40			0150	S030							E130					

● This diagram is viewed from the foil side.



Y22A BJ49 OT  
EO4L

Y22A BJ49 OT  
EO4L

Y22A BJ49 OT  
SO4L

Y22A BR32 OT  
S011N3

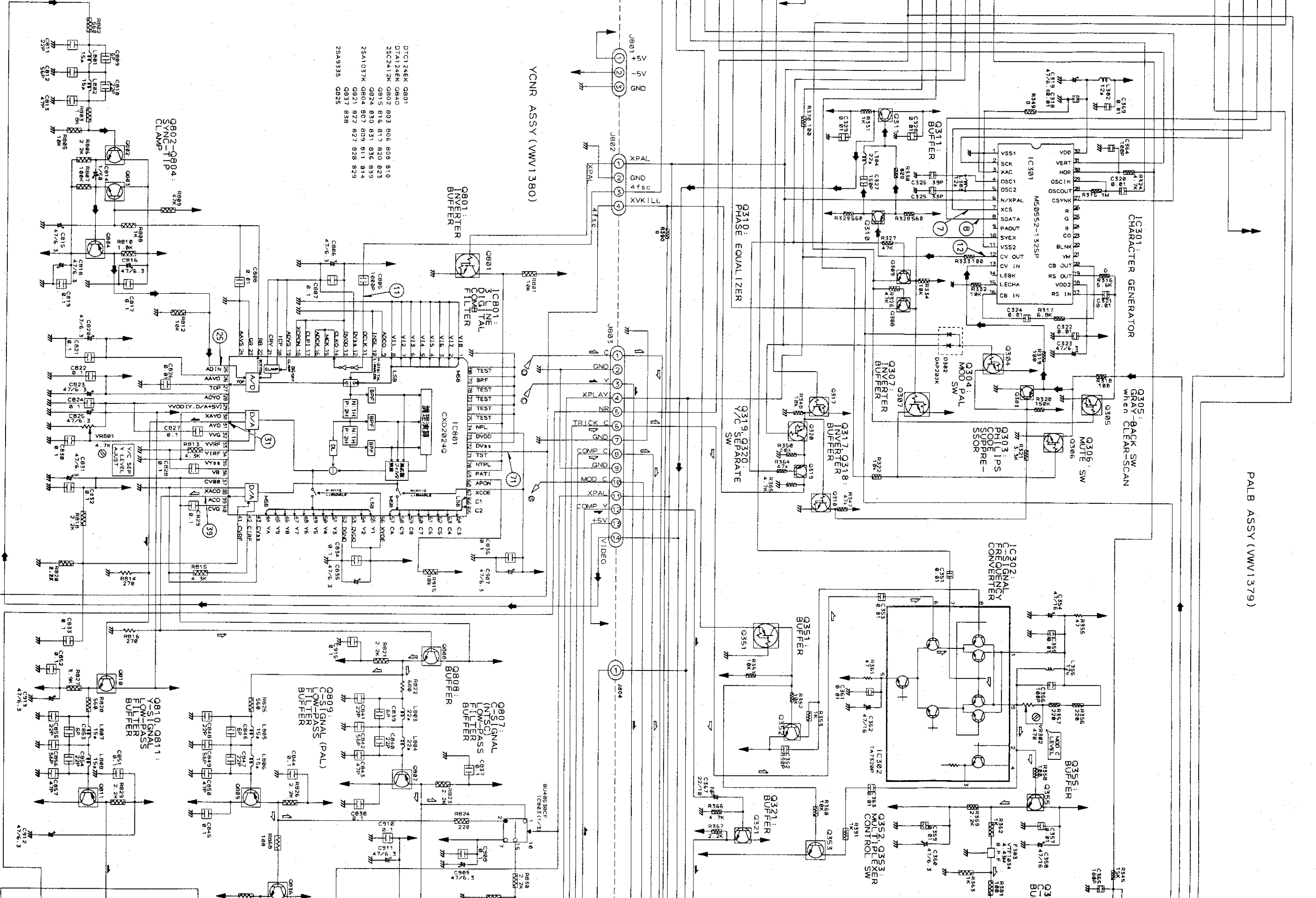
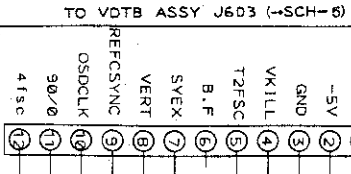
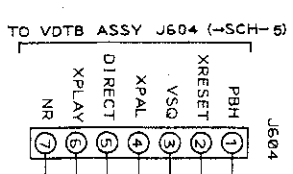
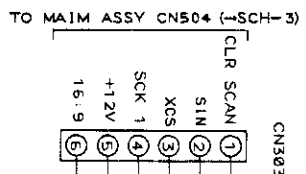
Y22A BTQV

OT MIAM  
Y22A  
81N3

OT MIAM  
Y22A  
EL

IC601	Q606	IC602	Q621	Q201	IC201	Q202	Q205	IC207	S040	Q411	0511	IC401	Q407	Q703	Q408	EO401	1E40	S0401
Q601	Q604	Q625	Q623	IC202	Q204	Q206	Q207	Q403	1040	Q501	Q497	Q498	Q406	Q496	Q700	Q409	40401	40401
Q603	Q602	Q610		IC202	Q209	Q208		Q403	Q704	Q500	Q702	Q701	Q404	Q456				
Q607	Q613			IC203	Q608			Q210	Q502									





- DTC124EK Q801
- DTC124EK Q840
- 25C2412K Q802
- 803 806 808 810
- 815 816 817 820 823
- 824 830 831 836 839
- 25A1037K Q804
- 807 809 811 814
- 821 827 828 829
- 837 838
- 25A9335 Q825

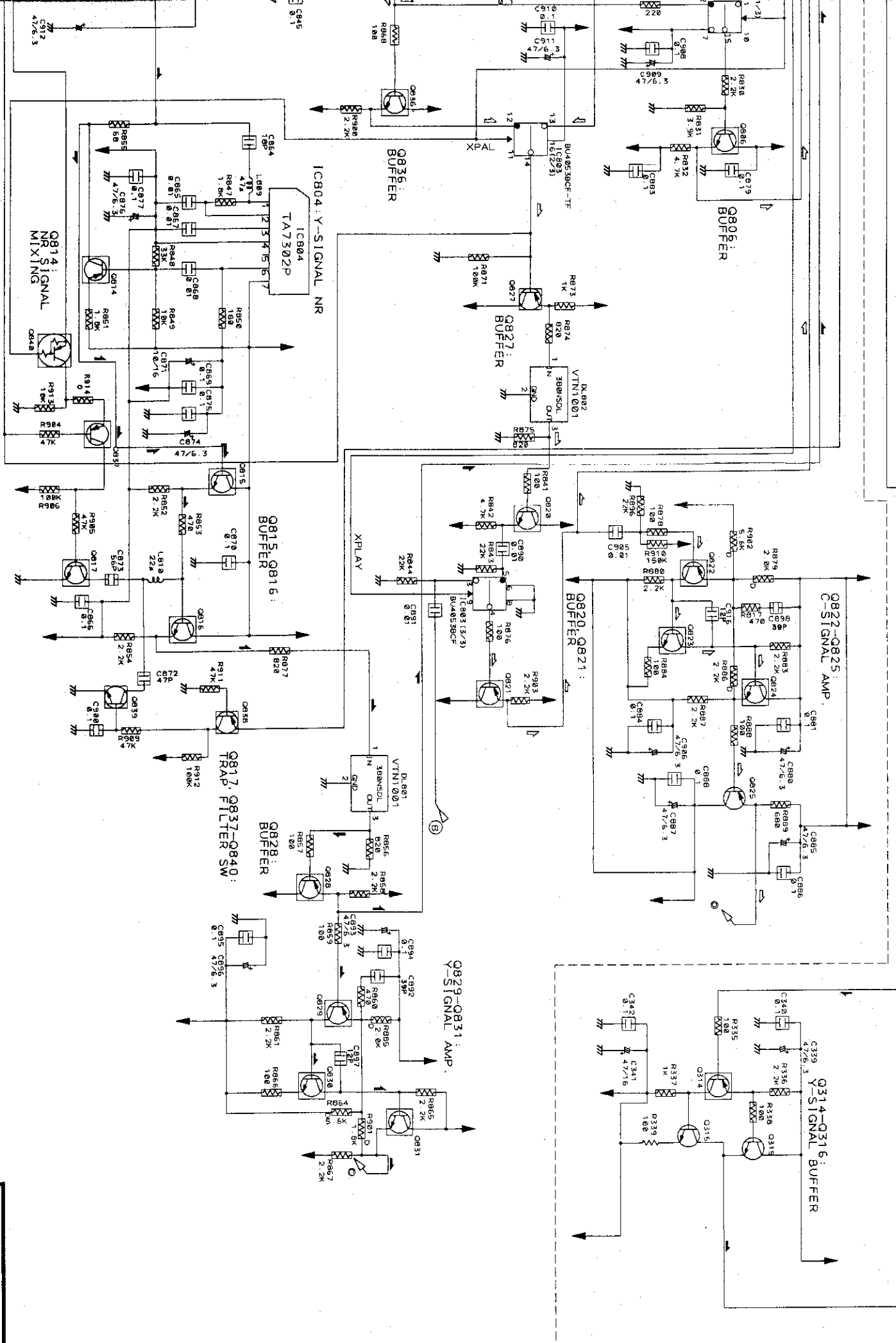
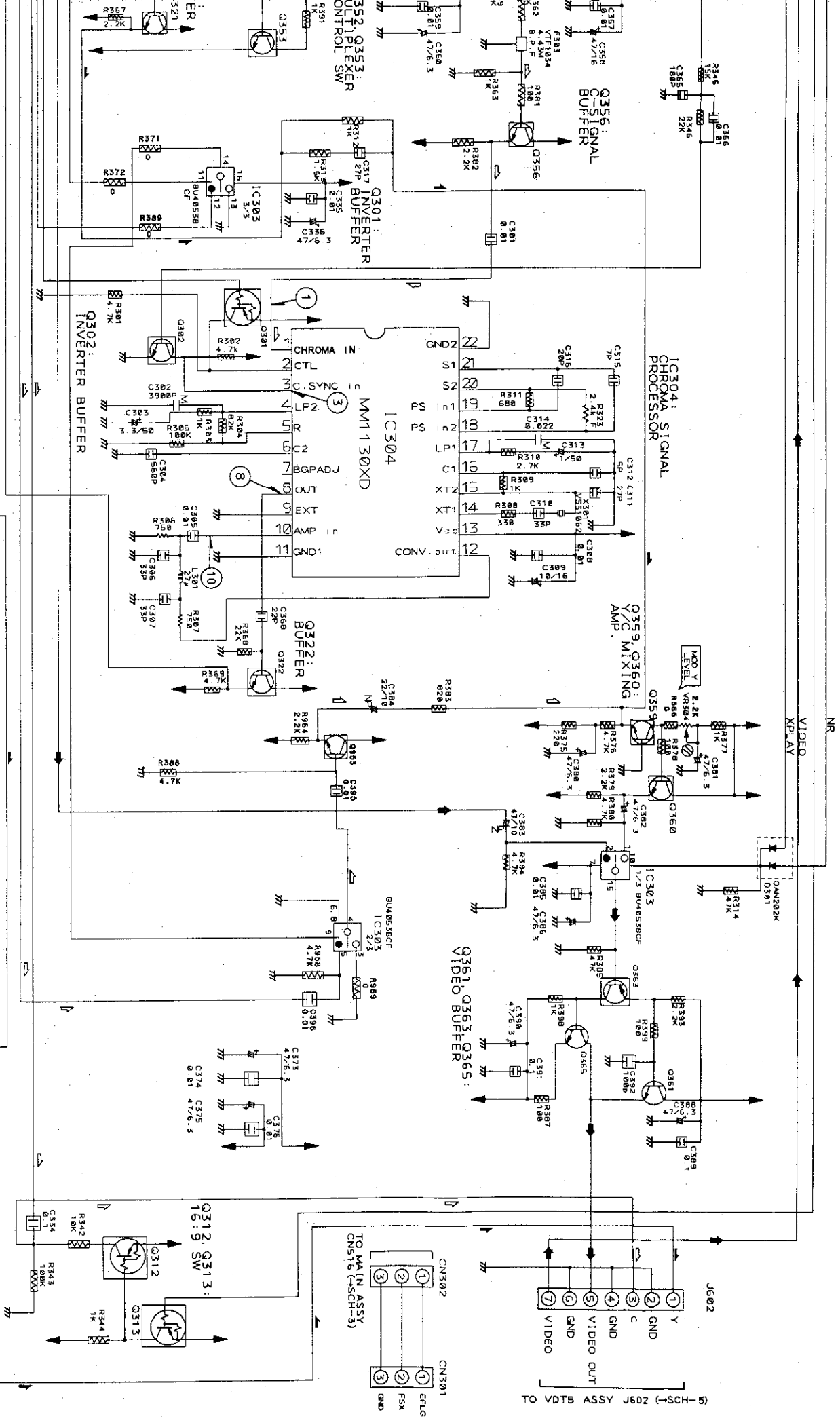
**SCH-6**

PALB ASSY,  
YCNR ASSY

DT1A124EK Q301 304 307 312 313 317 320 351  
 DT1C124EK Q305 306 318  
 Z8C2412K Q302 308 309 311 321 322 352 353  
 Q355 356 359 360 953  
 Z5A1037K Q303 310 314 319 363  
 Z5C1740S Q315 316 361 365

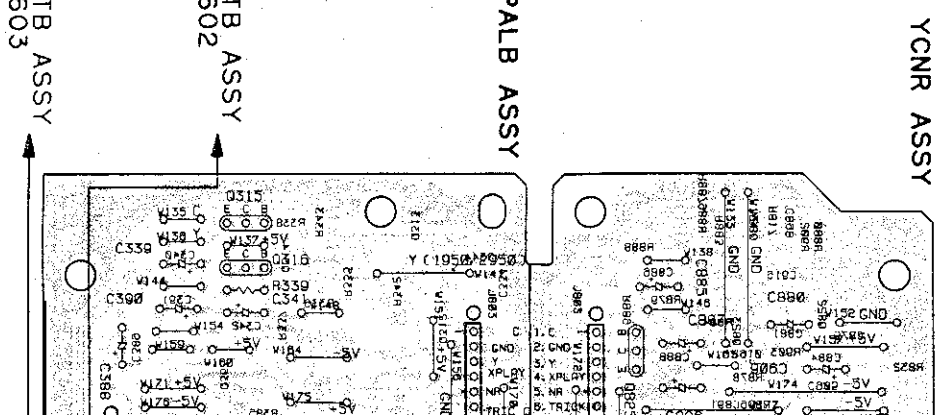
SCH-6

▶: VIDEO SIGNAL LINE  
 ◀: Y-SIGNAL LINE  
 ◀: C-SIGNAL LINE



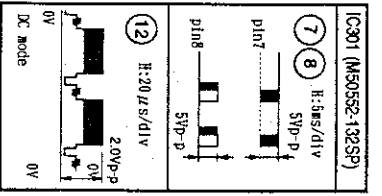
PALB ASSY,  
 YCNR ASSY  
**SCH-6**

SS80 80  
 CS80 80  
 AS80 Q825 IS



**PALB AND YCNR ASSEMBLIES**

Note: (No.) in the table correspond to the pin number.

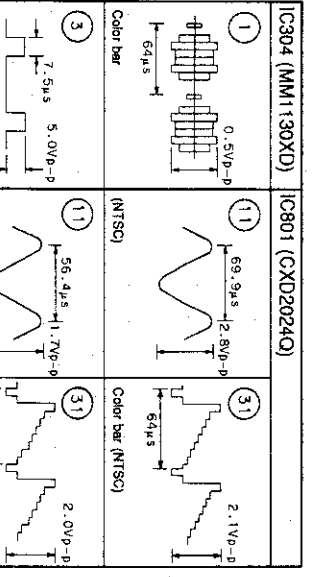


[PALB ASSY]

Note: These waveforms and voltage are in the play mode.

● IC301 (MS0552-132SP)

Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	0	9	-	17	0.8	25	-		
2	5	10	5	18	-	26	-		
3	5	11	0	19	0	27	-		
4	2.4	12	1.1	20	0	28	2.3		
5	2.4	13	1.1	21	-	29	2.3		
6	-	14	-	22	-	30	-		
7	5	15	1.8	23	-	31	-		
8	0.4	16	0.6	24	-	32	-		

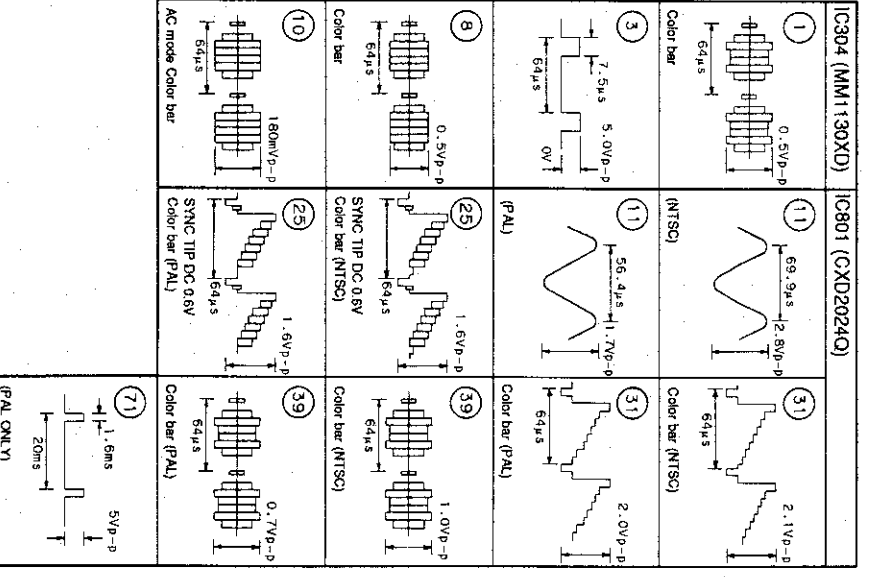


[PALB ASSY]

Note: These waveforms and voltage are in the play mode.

● IC304 (MM1130XD)

Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	3.2	7	1.8	13	5.0	19	3.3		
2	-	8	2.9	14	3.0	20	3.3		
3	-	9	0	15	3.7	21	3.3		
4	2.0	10	2.6	16	3.7	22	0		
5	2.1	11	0	17	2.6				
6	1.9	12	2.6	18	3.3				

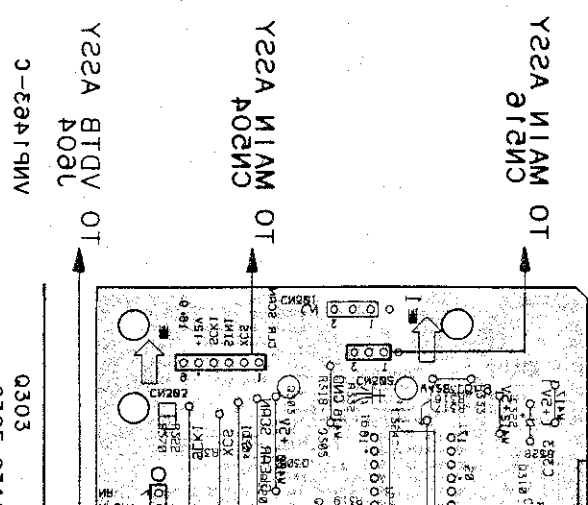


[YCNR ASSY]

Note: These waveforms and voltage are in the play mode.

● IC801 (CXD2024Q)

Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	0	21	0	41	2.6	61	0		
2	0	22	0.5	42	2.6	62	0		
3	0	23	0	43	0	63	0		
4	0	24	0	44	0	64	0		
5	0	25	-	45	0	65	0		
6	0	26	5	46	0	66	0		
7	0	27	2.6	47	0	67	5		
8	0	28	5	48	0	68	5		
9	0	29	5	49	0	69	-		
10	0	30	0	50	0	70	-		
11	2.3	31	-	51	0	71	-		
12	0	32	3.4	52	0	72	0		
13	5	33	2.6	53	5	73	5		
14	2.4	34	2.6	54	0	74	-		
15	2.4	35	0	55	0	75	0		
16	2.5	36	1.1	56	5	76	0		
17	5	37	5	57	0	77	0		
18	5	38	0	58	0	78	0		
19	0	39	1.3	59	0	79	0		
20	0	40	3.4	60	0	80	0		

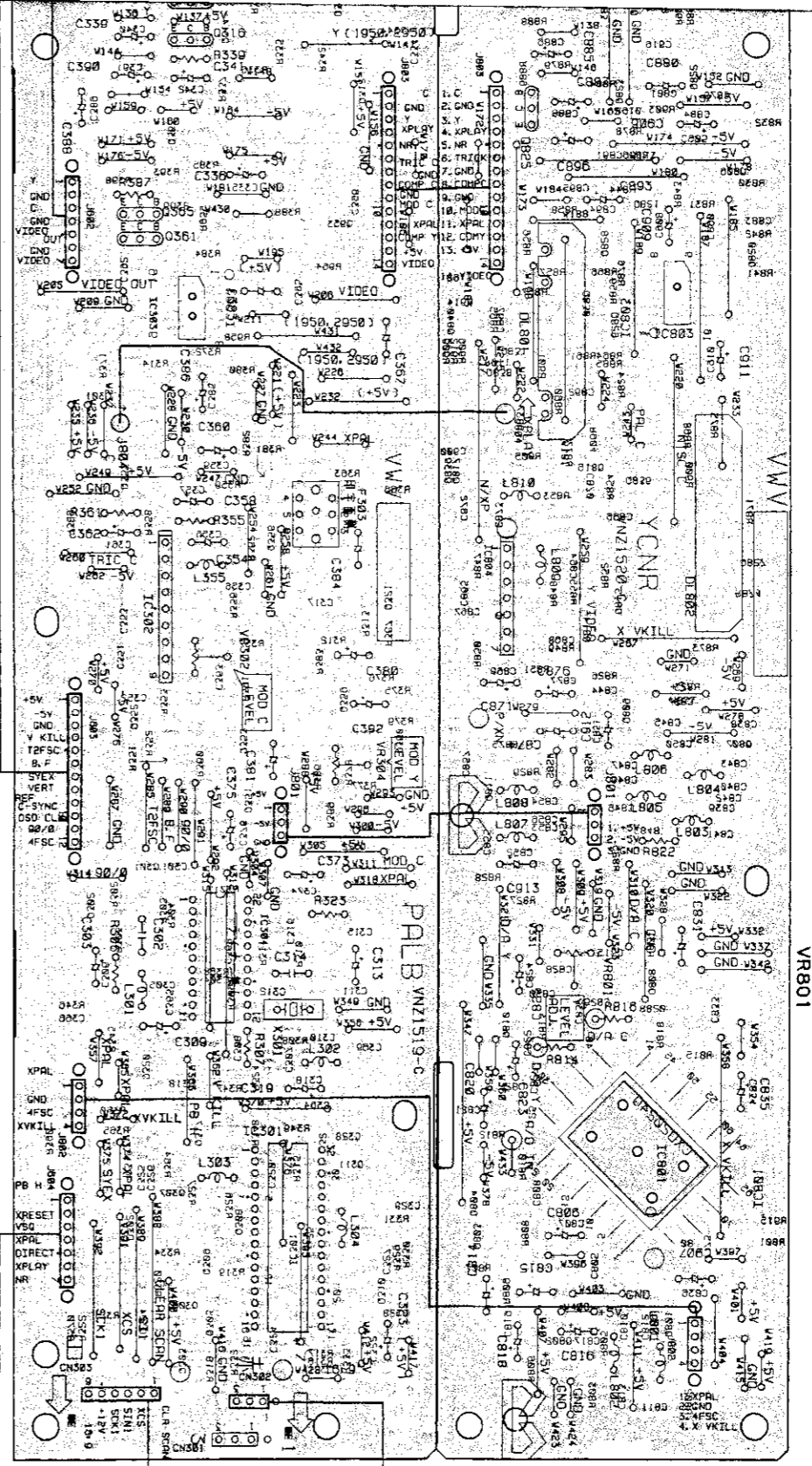


Q303  
 Q305 Q311  
 Q304 Q300

This diagram is viewed from the mounted parts side.

PCB-6

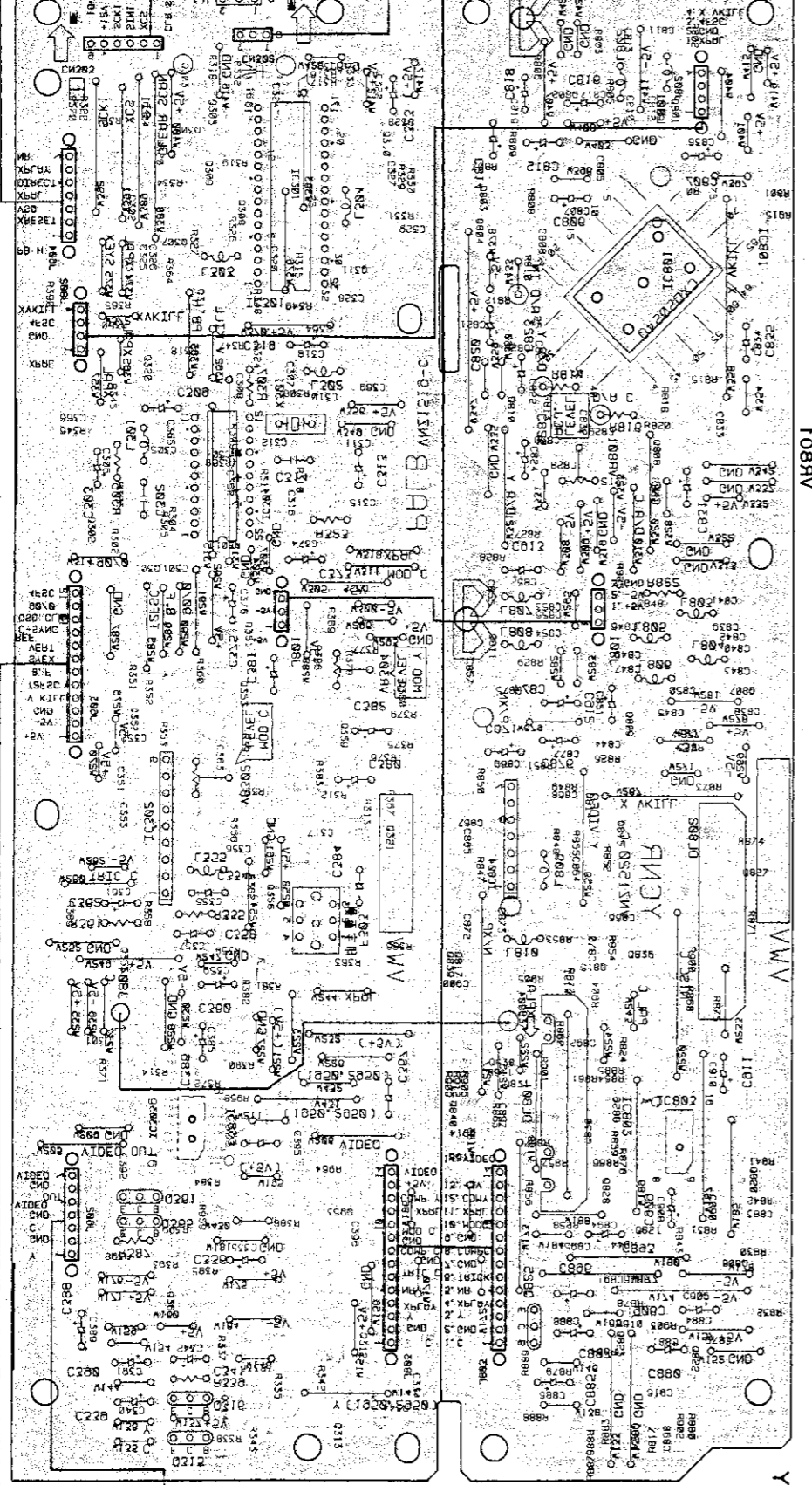
- 6S80 6E80 8E80
- 6S80 6E80 1E80 8180
- 6S80 6E80 8E80 1E80 7S80 2180
- 6S80 6E80 1S80 8S80 6081 7E80 6E80 1C804 4180 6080 1180 6080 0180 1080 1080 1080



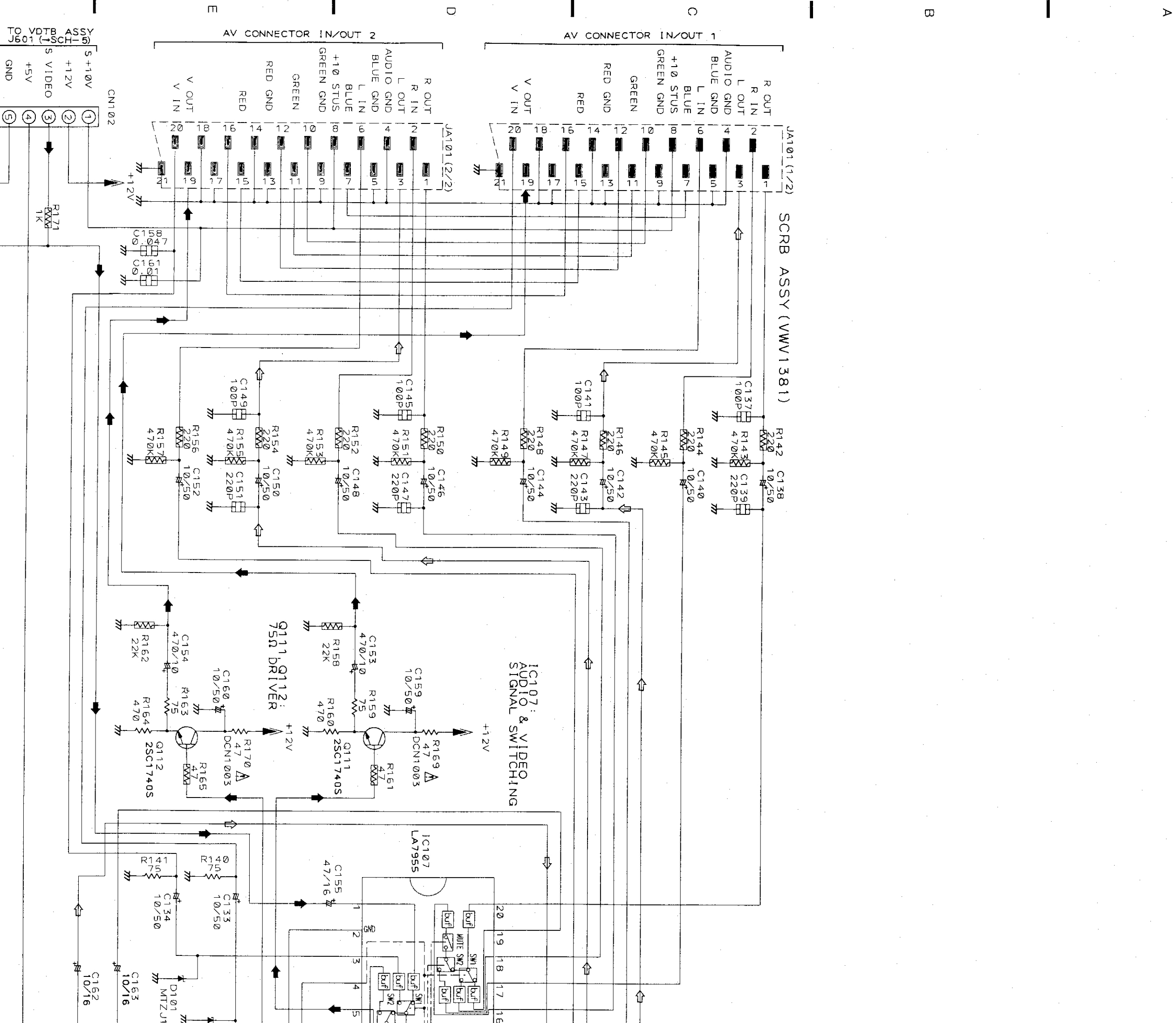
- 15 0316 6E0D 0365 0361 6E0D 6E0D 1C302 6E0D 0E0D 1E0D 5E0D 1C304 81E0 11E0 1C301 E0E0
- 61E0 51E0 6E0D 60E0 60E0 10E0 70E0 80E0 01E0 60E0 E0E0 10E0 60E0 80E0 80E0 40E0

This diagram is viewed from the foil side.

- 0801 0804 0829
- 0802 0803 1C801 0810 0808 0811 0809 0814 4081 0839 0837 1C803 0828 0821 2S80 0824
- 0836 0816 0831 0830 0822
- 0816 0831 0830 0817 0838 0840 0820 0806 0823



- 0303 10E01 0311 0318 40E01 0322 0351 0360 0359 50E01 0356 0355 1E0D 0E0D 0363 81E0 21E0
- 0305 0310 0308 0307 0320 0301 0353 0352 0321 1C303 0953 0312 0313
- 0304 0306 0309 0319 0302 1C303 0953 0312 0313 0314



SCH-7

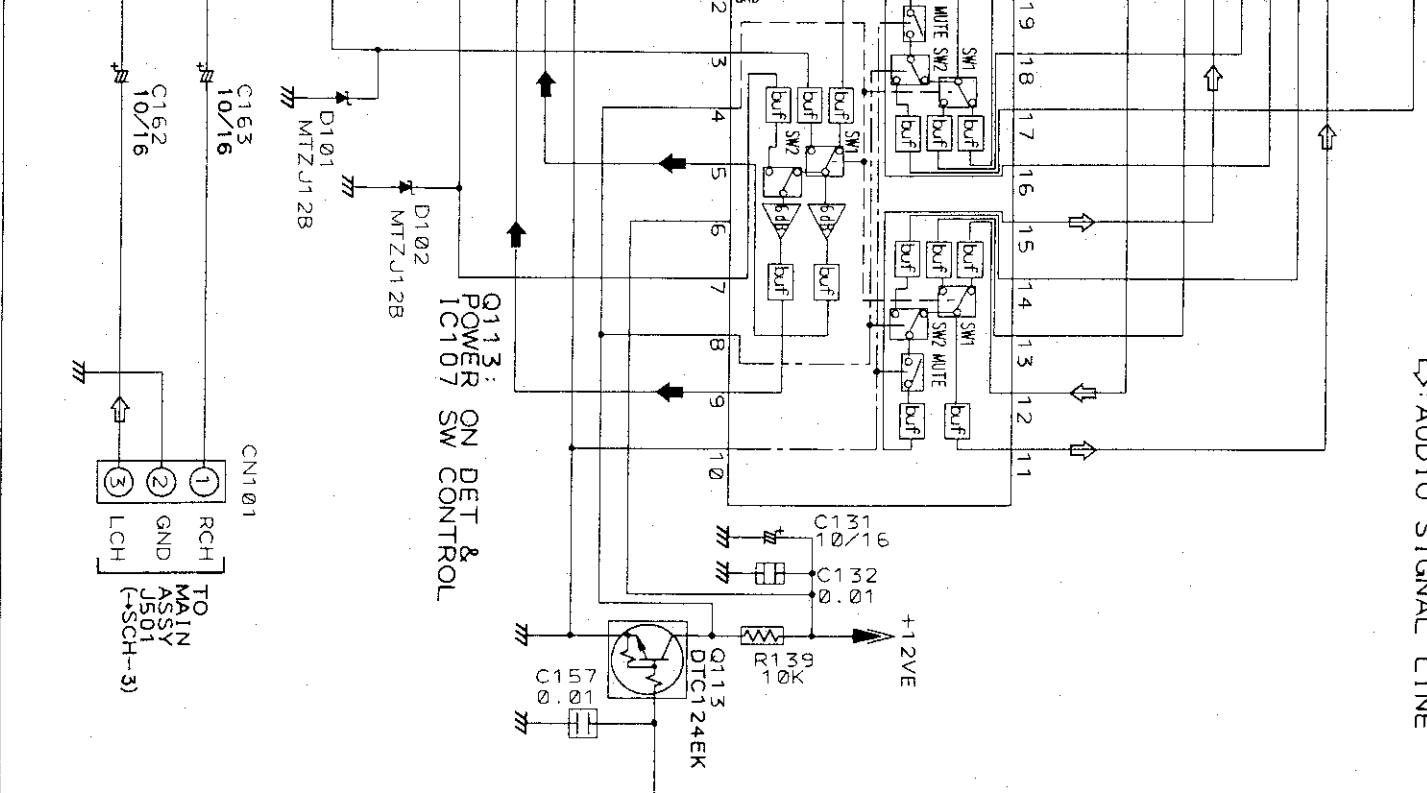
SCRIB ASSY

2-50

1 2 3 4 5

→ VIDEO SIGNAL LINE  
⇌ AUDIO SIGNAL LINE

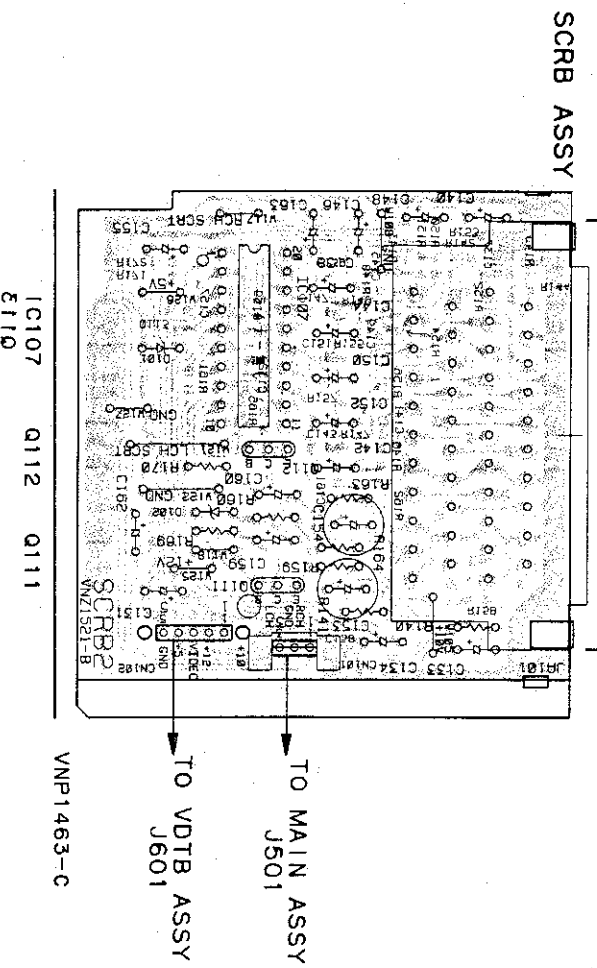
SCH-7



● This diagram is viewed from the mounted parts side.

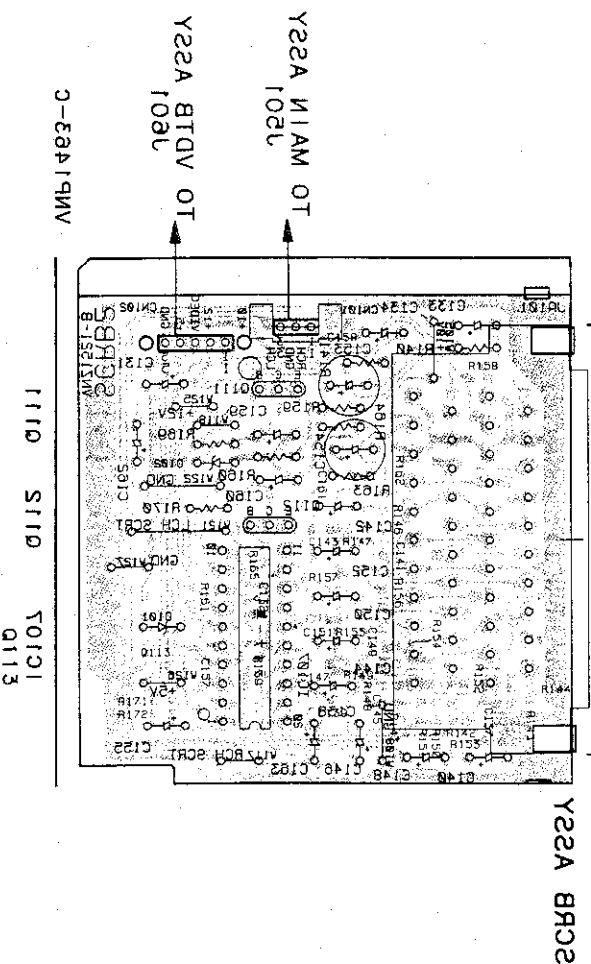
AV CONNECTOR IN/OUT

PCB-7



● This diagram is viewed from the foil side.

Y-B39



SCR-B ASSY

SCH-7