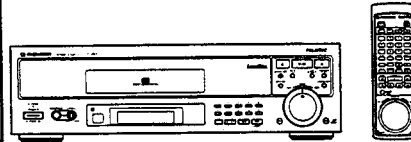


Service Manual

PIONEER
The Art of Entertainment



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RRV1154

The chapter 1 of this Service Manual will not be reprinted. On your additional orders, we may supply only the chapter 2. For the chapter 1, please make copies and attach to the chapter 2 at your side if necessary.

CD CDV LD PLAYER

CLD-1950

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

Type	Model	Power Requirement	The voltage can be converted by the following method.
	CLD-1950		
HB	○	AC240V	AC220—230V, *
HEZ	○	AC220—230V	AC240V, *

* : Alter the wiring of the Power-supply block at the primary winding of Power-transformer referring to the "Line Voltage Selection" described in Service Manual.

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CHAPTER 2

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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 varoitusmerkki

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.

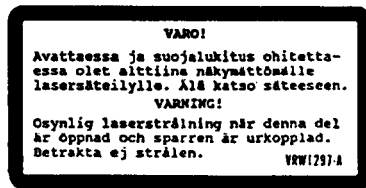
LASER DIODE CHARACTERISTICS
MAXIMUM OUTPUT POWER: 5 mw
WAVELENGTH: 780-785 nm

LABEL CHECK

HB model



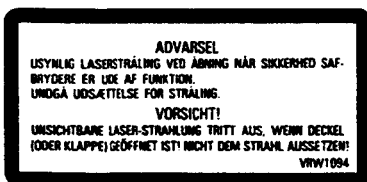
HEZ model



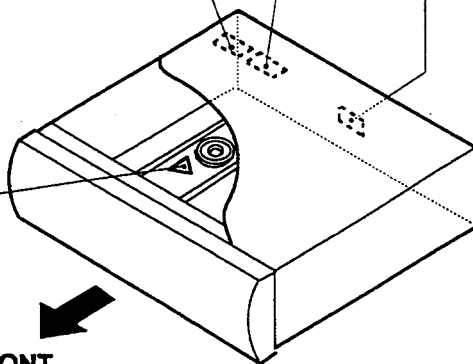
HEZ and HB models



HEZ model



HEZ and HB models



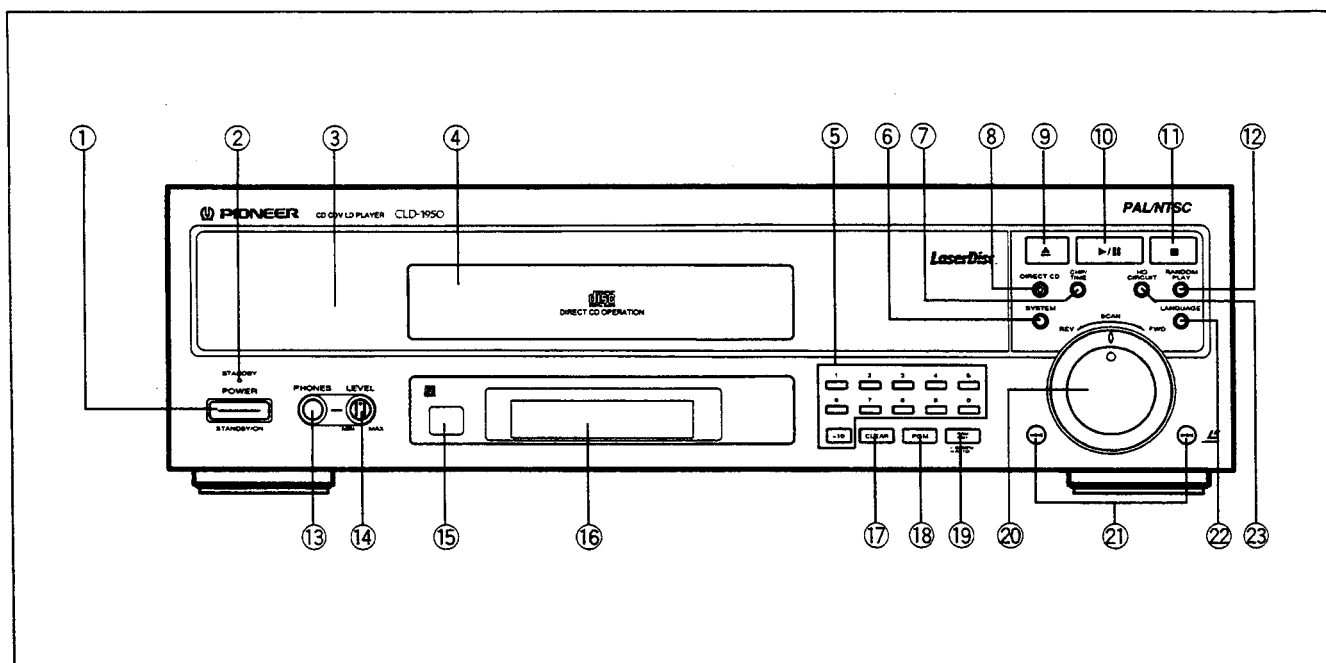
FRONT

Additional Laser Caution

- The ON/OFF statuses of the slider - position detection switches (PARK INNER, PARK OUTER on the PASB assembly), loading - status detection switches (SW 1,2 and 3 on LOSB assembly) are detected by the microprocessor (IC101 in the MAIN ASSY). To permit the laser diode to oscillate, it is required to set the slider - position detection switch for the LD ACTIVE status (PARK INNER: OFF, PARK OUTER: 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 ASSY.
In the test mode*, the laser diode oscillates when microprocessor detects a PLAY signal, or when the PLAY key is pressed (S207 ON in the FLKY assembly), with the above requirements satisfied.
- 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 1-10.

1.2 PANEL FACILITIES



- ① **POWER STANDBY/ON switch**
Press to turn the power on and off.
- ② **STANDBY indicator**
- ③ **Disc table**
- ④ **CD disc table**
- ⑤ **Digit buttons**
- ⑥ **SYSTEM button**
- ⑦ **CHP/TIME button**
- ⑧ **DIRECT CD button/indicator**
- ⑨ **Open/close button (▲)**
- ⑩ **Play/pause button (▶/II)**
- ⑪ **Stop button (■)**
- ⑫ **RANDOM PLAY button**
- ⑬ **PHONES jack**

- ⑭ **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.
- ⑮ **Remote sensor**
- ⑯ **Display window**
- ⑰ **CLEAR button**
- ⑱ **PGM (program) button**
- ⑲ **PGM EDIT button**
- ⑳ **SCAN control**
- ㉑ **Skip buttons (◀◀, ▶▶)**
- ㉒ **LANGUAGE button**
- ㉓ **HQ CIRCUIT button**

1.3 SPECIFICATIONS

1. General

System LaserVision Disc system and Compact Disc digital audio system
 Laser Semiconductor laser wavelength 780 nm
 Power requirements
 European model AC 220 ~ 230 V, 50/60 Hz
 UK model AC 240 V, 50/60 Hz
 Power consumption 47 W
 Weight
 European model 7.4 kg
 UK model 7.5 kg
 Dimensions 420 (W) x 390 (D) x 122 (H) mm
 Operating temperature +5°C ~ +35°C
 Operating humidity 5% ~ 85%
 (There should be no condensation of moisture.)

2. Disc

LaserVision Discs

PAL disc

*Maximum playing times
 30 cm active play disc 72 min/both sides
 30 cm long play disc 2 hours/both sides
 20 cm active play disc 28 min/both sides
 14 min/one side
 20 cm long play disc 40 min/both sides
 20 min/one side
 Spindle motor speed
 Active play disc 1,500 rpm
 Long play disc 1,500 rpm (inner circumference)
 to 570 rpm (outer circumference)
 (For a 30 cm disc)

NTSC disc

*Maximum playing times
 30 cm standard play disc 1 hour/both sides
 30 cm extended play disc 2 hours/both sides
 20 cm standard play disc 28 min/both sides
 14 min/one side
 20 cm extended play disc 40 min/both sides
 20 min/one side
 Standard play disc 1,800 rpm
 Extended play disc 1,800 rpm (inner circumference)
 to 600 rpm (outer circumference)
 (For a 30 cm disc)

Compact Discs

DISC Diameter: 12 cm, 8 cm, Thickness: 1.2 mm
 Rotation direction (pickup side) Counterclockwise
 Linear speed 1.2 ~ 1.4m/sec
 *Maximum playing time 74 min. 12 cm discs
 20 min. 8 cm discs
 (For stereo playback)

Compact Discs with Video

Disc Diameter: 12 cm, Thickness: 1.2 mm
 Rotation direction (pickup side) Counterclockwise
 Linear speed Audio portion: 1.2 ~ 1.4m/sec
 Video portion: 11 ~ 12m/sec
 *Maximum playing time Video portion: 5 min. (CLV)
 Audio portion: 20 min. (Digital)

* Actual playback time differs for each disc.

3. Video characteristics

Format PAL/NTSC specifications
 Video output
 Level 1 Vp-p nominal, sync. negative, terminated
 Impedance 75Ω unbalanced
 Jack RCA jack
 S-Video output
 Y (luminance) level 1 Vp-p (75 Ω)
 C (color) level 286 mVp-p (75 Ω)
 Jack S-VIDEO jack

4. Audio characteristics

Output level
 During analog audio output 200 mVrms
 (1 kHz, 40%)
 During digital audio output 200 mVrms
 (1 kHz, -20 dB)
 Jacks Both RCA jacks
 Number of channels 2

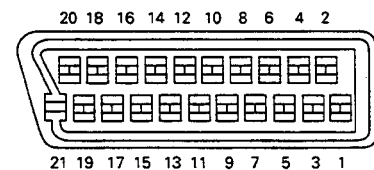
Digital Audio Characteristics

Frequency response	4 Hz - 20 kHz
SN ratio	115 dB (EIAJ)
Dynamic range	97 dB (EIAJ)
Total harmonic distortion	0.003 % (EIAJ)
Wow and flutter	Limit of measurement (EIAJ)

5. Other Terminals

Control input/output Both miniature jacks
 CD-DECK synchro Miniature jack
 Optical digital output Optical digital jack
 AV connector input/output 21-pin connector x 2
 This connector provides the video and audio signals for connection to a colour video TV monitor (or TV set) which has a "AV CONNECTOR" terminal.

21-pin connector assignment



PIN no.	1 Audio 2/R out	17 GND
	3 Audio 1/L out	19 Video out
	4 GND	21 GND
	8 Status	

6. Accessories

Remote control unit (CU-CLD096) 1
 Size "AAA" (IEC R03) dry cell batteries 2
 Euroconnector cable 1
 Audio cord 1
 Operating instructions 1
 Warranty card 1

7. Functions

Remote control unit operations (CU-CLD096)

	Function	Active play Disc (CAV)	Long play Disc (CLV)	Compact Disc with Video	Compact Disc
Basic Functions	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
	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

■ PD3274A (FLKY ASS'Y IC201)

● Mode control IC

● Pin function

No.	Pin name	I/O	Function
1	VCC	I	+5V
2	SYNC OUT	O	CD deck synchro output
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	POWER ON	O	Mother board power supply switching output
10	AVCC	I	+5V
11	AN0		
12	AN1		
13	P02		
14	P03		
15	D-CD SEL	I	Direct CD FL display select port ("H" OFF)
16	xPANL	I	PAL With analog circuit (No "H")
17	P06	I	GND
18	P07		
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	DOGFOOD	O	Pulse output for watchdog timer
30	P15	O	NC (OPEN)
31	P16	I	+5V
32	P47	O	NC (OPEN)
33	SHTLSCAN	O	Shuttle scan output
34	LED (DRCTCD)	O	LED output : Direct CD indication
35	LED (STNBY)	O	LED output : Standby indication

- 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	SEG L	O	Display segment output		
37	SEG K				
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	I	-27V		
48	VDISP				
49	G9			O	Display grid output
50	G8				
51	G7				
52	G6				
53	G5				
54	G4				
55	G3				
56	G2				
57	G1	I	Key data input		
58	KIN0				
59	KIN1				
60	KIN2				
61	KIN3				
62	KIN4				
63	KIN5				
64	KIN6				

■ PD0193A (MAIN ASSY IC101)

● Mechanism control IC

● Pin function

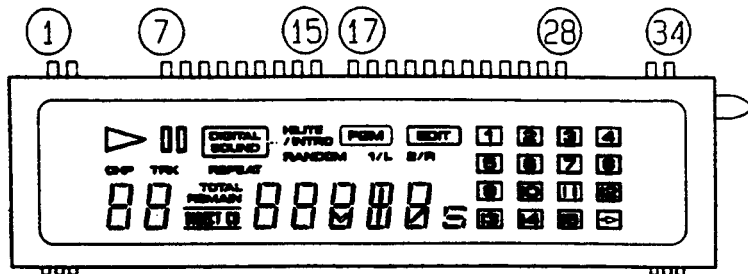
No.	Pin name	I/O	Function
1	VCC	I	Power connection pin. Impresses 5V±10%.
2	XCD	O	LD/CD switching signal output pin. "L" = CD "H" = LD
3	RFCORR	O	RF collection switch signal output pin. "H" = gain up CD, CDV-A:Low Raise the gain with the CAV inner circuit, otherwise High.
4	GPWM	O	Duty pulse signal output 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 miss clamp 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 φ 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	N. C.	O	Not used
44	N. C.	O	Not used
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 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

1.5 FL INFORMATION

●VAW1033(V201)

PIN LOCATION



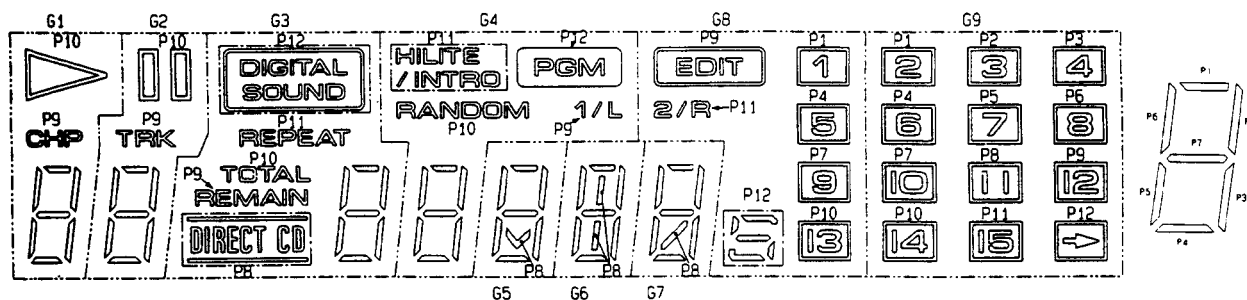
PIN ASSIGNMENT

PIN ASSIGNMENT

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Assignment	F	F	NP	NP	NP	NP	G1	G2	G3	G4	G5	G6	G7	G8	G9	NP	P1
Pin No.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
Assignment	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	NP	NP	NP	NP	F	F

F:Filament G1-G9:Grid P1-P12:Anode NP:No pin

ANODE GRID ASSIGNMENT & PIN ASSIGNMENT



ANODE GRID ASSIGNMENT

	G1	G2	G3	G4	G5	G6	G7	G8	G9
P1	P1	P1	P1	P1	P1	P1	P1	1	2
P2	P2	P2	P2	P2	P2	P2	P2		3
P3	P3	P3	P3	P3	P3	P3	P3		4
P4	P4	P4	P4	P4	P4	P4	P4	5	6
P5	P5	P5	P5	P5	P5	P5	P5		7
P6	P6	P6	P6	P6	P6	P6	P6		8
P7	P7	P7	P7	P7	P7	P7	P7	9	10
P8			DIRECT CD		∨	|	/		11
P9	CHP	TRK	REMAIN	1/L				EDIT	12
P10	▷	⏸	TOTAL	RANDOM				13	14
P11			REPEAT	HILITE / INTRO				2/R	15
P12			DIGITAL SOUND	PGM				⏮	⏭

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.

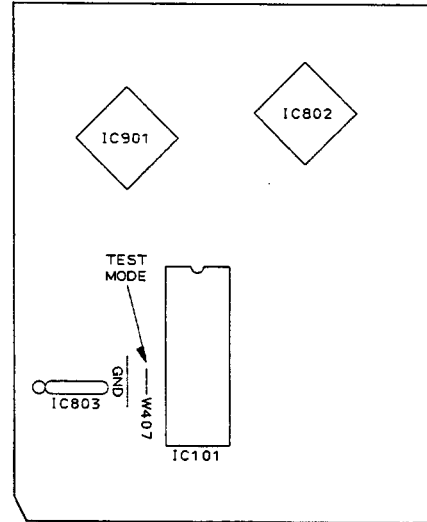
- When entering the test mode, the FL display and the LED will light until an operation is carried out with a key.
- When entering the test mode, the TV system will become that of NTSC.
- During the test mode, the background will be blue if an LD or a CDV is not playing (When NTSC and PAL), or black (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	◀ II / II ▶ (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.

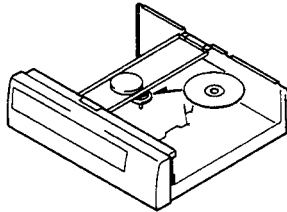
Table 1

● PLAYER OPERATION IN THE TEST MODE

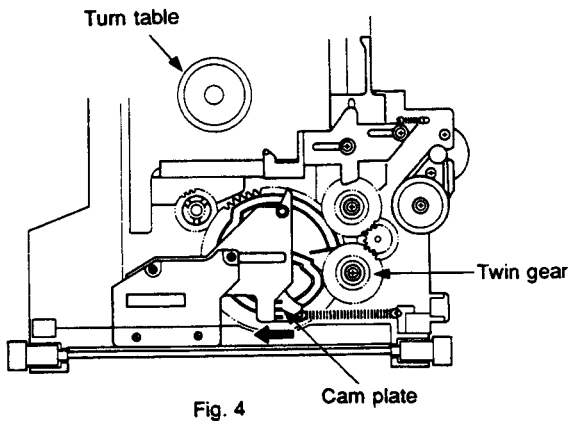
Operate the player by selecting a test mode function with the keys on the player or on the remote control unit.

• CD PLAYBACK

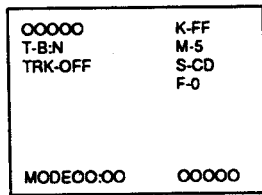
- ① Place the CD disc on the turn table.



- ② Press the PLAY (▶) key once. (Twin gear starts to move.)
- ③ Push the cam plate (Fig. 4) in the direction of the arrow and wait until the CD disc is clamped.



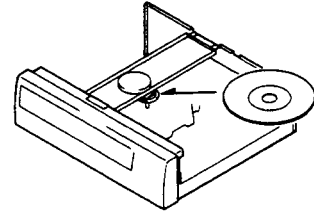
- ④ Press the ◀◀ or ▶▶ keys to appear "S-CD" on the TV screen display.



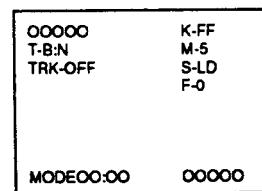
TV screen display

- ⑤ Press the PLAY (▶) key twice, disc will be normally playbacked.

• LD PLAYBACK



- 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. 4) 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

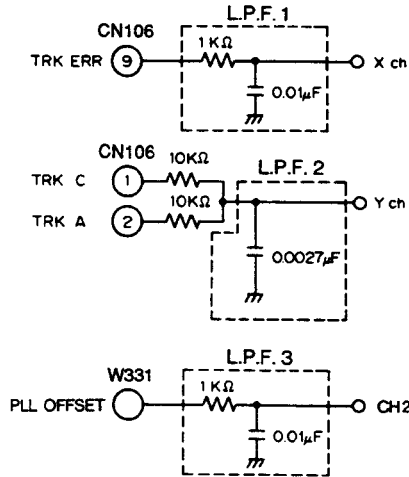
- ⑤ Press the PLAY (▶) key twice, disc will be normally playbacked.

1.6.2 ADJUSTMENT PRECAUTIONS

● JIGS FOR ADJUSTMENT

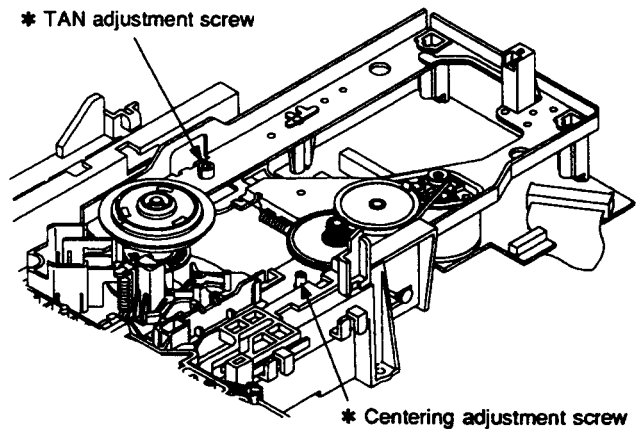
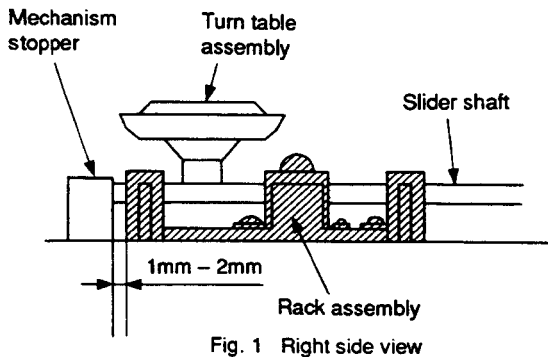
- CD test disc (STD-901 or STD-902)
- LD test disc (GGV1003 and GGV1007)
- (-) Screwdriver (medium)
- (-) Screwdriver (small)
- Hexagonal wrench driver (straight type, size : 3mm)
- Resistor (10kΩ × 2, 47kΩ)
- Dual-trace oscilloscope (with delay)
- AF oscillator
- Frequency counter
- Digital voltmeter
- TV monitor
- Low-pass filter

Use the low-pass filters below in the coarse centering adjustment 2. and fine centering adjustment (L.P.F.1 and L.P.F.2) 6. and PLL OFFSET adjustment (L.P.F.3) 1. when the S/N of the waveform is hard to observe.



● RACK ASSEMBLY DURING CENTERING ADJUSTMENT

The S-IN position (without hitting the mechanism stopper) of the rack assembly during centering adjustment is indicated below.



* : As the adjustment range of both the TAN and centering adjustment screws is only ±90° from the center, do not turn the screws beyond this range.

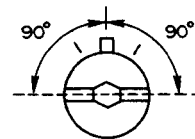
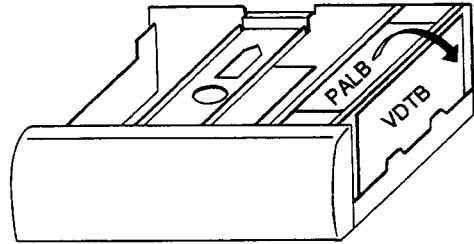


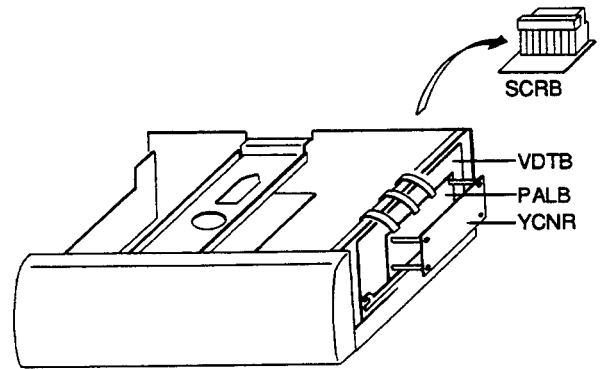
Fig. 2 TILT base section

● **DISASSEMBLY ORDER**
 (When diagnosing the MAIN ASSY)

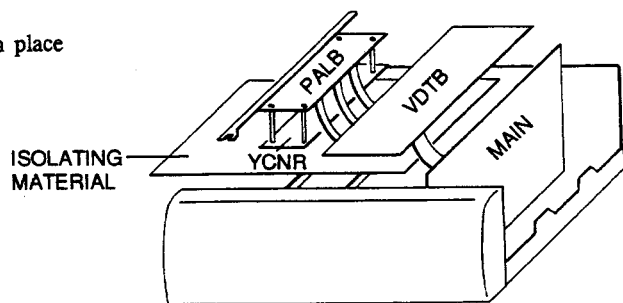
① Remove the tray, open PALB and YCNR assy, and fix it to the holder.



② Removes SCRB assy.



③ Remove VDTB and MAIN assy, and stand MAIN up.
 Put isolating material on top of the clasper, and then place the VDTB, PALB and YCNR assy on top.



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

● MAIN ASSY

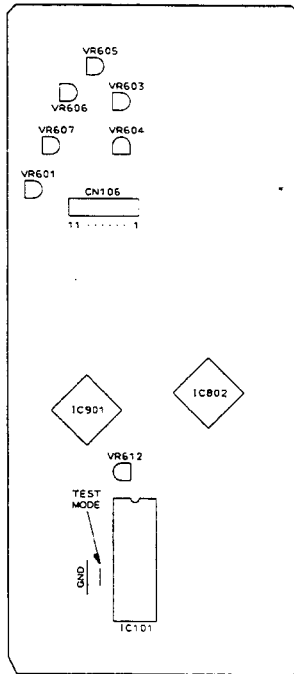


Fig. 1 Adjustment diagram of MAIN ASSY

- 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

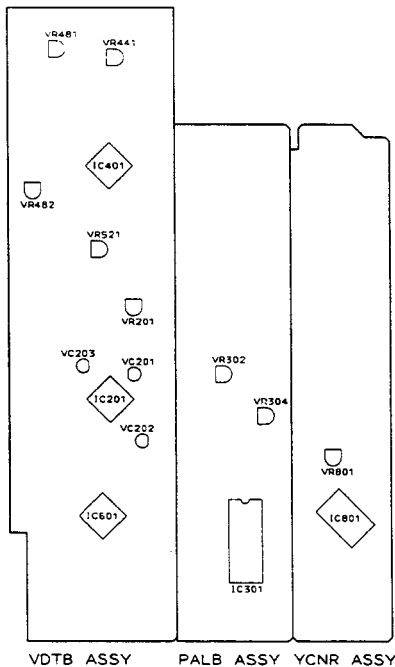


Fig. 2 Adjustment diagram of VDTB ASSY, PALB ASSY AND YCNR ASSY

- 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	Mechanism assembly Centering adjustment screw	• 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 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	Carriage assembly TAN adjustment screw	• 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 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	Mechanism assembly Centering adjustment screw	• 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" (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 • GGV1003still #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	A VR604	<ul style="list-style-type: none"> Oscilloscope GGV1003 AF Oscillator Resistor (47kΩ) 	CN106 X : ⑦ pin FCS IN Y : ⑥ pin FCS ERR	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Oscilloscope GGV1003 Clip etc. (Short GND—⑦ pin) 	CN106 X : — Y : ⑥ pin FCS ERR ⑦ pin GND (⑦, ⑥ pin Short)	<ul style="list-style-type: none"> 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	A VR603	<ul style="list-style-type: none"> Oscilloscope GGV1003 AF Oscillator Resistor (47kΩ) 	CN106 X : ⑩ pin TRK IN Y : ⑨ pin TRK ERR	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Oscilloscope GGV1003 	CN106 X : — Y : ⑨ pin TRK ERR	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Oscilloscope GGV1003 	CN106 ③ pin (RF)	<ul style="list-style-type: none"> 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.	

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"> Oscilloscope DC Volt meter STD-901 or STD-902 (or LDD disc) 	Digital sound terminal W331	<ul style="list-style-type: none"> Test mode Tilt servo ON TRK servo ON/OFF Digital sound play 	<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 $0 \pm 0.1V$.</p>	
2 NTSC Reference clock adjustment	VC202 (VDTB ASSY)	<ul style="list-style-type: none"> Frequency counter GGV1003 	IC201-33(TBC CLK)	<ul style="list-style-type: none"> NTSC PLAY mode. Play the NTSC disc. or Select the NTSC mode with the SYSTEM button of the front panel. (Note1) 	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"> Frequency counter GGV1007 	IC201-33(TBC CLK)	<ul style="list-style-type: none"> PAL PLAY mode. Play the PAL disc. or Select the PAL mode with the SYSTEM button of the front panel. (Note1) 	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"> Frequency counter GGV1007 	IC201-24(OSD CLK)	<ul style="list-style-type: none"> PAL PAUSE mode. Play the PAL disc and set to pause state. or Select the PAL mode with the SYSTEM button of the front panel. (Note1) 	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"> Oscilloscope GGV1007 	IC203-1	<ul style="list-style-type: none"> Play the PAL disc. 	<p>Play the PAL disc and check that the voltage of VCXO ERR at IC203-1 pin is $0V \pm 100mV$. If the specified voltage is not obtained, adjust VC201 so that the voltage becomes $0V \pm 100mV$.</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"> Oscilloscope GGV1007 	CH1 : C405 lead wire CH2 : C499 + lead wire	<ul style="list-style-type: none"> Normal mode GGV1007 #4,000 still 	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"> Oscilloscope TV monitor GGV1003 	Video output terminal (75Ω termination or TV monitor connection)	<ul style="list-style-type: none"> Normal mode GGV1003 #19,900 still HQ circuit OFF 	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"> Oscilloscope GGV1003 	CH1 : C443—(minus) lead wire CH2 : C445—(minus) lead wire	<ul style="list-style-type: none"> Normal mode GGV1003 #19,900 still 	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>
9 VPS Error adjustment	VR521 (VDTB ASSY)	<ul style="list-style-type: none"> TV monitor GGV1003 	Video output terminal (TV monitor)	<ul style="list-style-type: none"> Normal mode GGV1003 #8,000 still 	Color irregularity on the magenta screen is minimized.	
10 Y output level adjustment	VR801 (YCNr ASSY)	<ul style="list-style-type: none"> TV monitor Oscilloscope GGV1003 	Video output terminal (75Ω terminated) (NOTE2)	<ul style="list-style-type: none"> Normal mode GGV1003 #19,900 still 	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>Oscillo range V: 20mV/div, 10μs/div (trigger) AC mode</p>
11 MOD C—Signal level adjustment	VR304 (PALB ASSY)	<ul style="list-style-type: none"> Oscilloscope GGV1003 	CH1 : IC303—2 (REFERENCE) CH2 : IC303—1	<ul style="list-style-type: none"> Normal mode GGV1003 #19,900 still HQ circuit ON 	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.	
12 MOD C—Signal level adjustment	VR302 (PALB ASSY)	<ul style="list-style-type: none"> Oscilloscope GGV1003 	CH1 : IC303—2 (REFERENCE) CH2 : IC303—1	<ul style="list-style-type: none"> Normal mode GGV1003 #8,000 still 	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.	
13 PAL Inverting SC phase adjustment	VR201 (VDTB ASSY)	<ul style="list-style-type: none"> TV monitor GGV1007 	Video output terminal (TV monitor)	<ul style="list-style-type: none"> Normal mode GGV1007 test disc #6,500 still 	Adjust VR201 so that the color irregularity on the magenta screen is minimized at still.	

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 Δ 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 - 1950/HB and CLD - 1950/HEZ.

1.7.1 PACKING

(1) CONTRAST OF CLD - 1950/HB AND CLD - 1950/HEZ.

CLD - 1950/HB and CLD - 1950/HEZ have the same construction except for the following :

Mark	No.	Symbol & Description	Part No.	
			CLD - 1950/HB	CLD - 1950/HEZ
NSP	2	Caution	Not used	VRR1009
	3	Caution(UC)	VRR1020	Not used
NSP	3	Caution(EW)	Not used	VRM1027
	5	Operating instructions (Dutch/Swedish/Spanish/Portuguese)	Not used	VRF1028
	17	Packing case	VHG1367	VHG1355

(2) FOR CLD-1950/HB

Mark	No.	Description	Parts No.
NSP	1	Warranty card	ARW-088
	2	.....
	3	Caution (UC)	VRR1020
	4	Operating instructions (English/French/German/Italian)	VRE1022
	5	.....
NSP	6	Protector A	VHB1004
	7	Connection cord	VDE-055
	8	Euro scart cable(21P)	VDE1027
NSP	9	Battery (R03,AAA)	VEM-022
	10	Remote control unit	VXX2029
NSP	11	Battery cover	VNK2431
	12	Polyethylene bag	Z21-029
	13	Protector B	VHB1005
NSP	14	Mirror mat	VHL1006
	15	Polyethylene bag	VHL-014
	16	.....
	17	Packing case	VHG1367

1.7.2 EXTERIOR SECTION

(1) CONTRAST OF CLD - 1950/HB AND CLD - 1950/HEZ.

CLD - 1950/HB and CLD - 1950/HEZ have the same construction except for the following :

Mark	No.	Symbol & Description	Part No.	
			CLD - 1950/HB	CLD - 1950/HEZ
	32	Caution label	PRW1018	VRW1094
	33	Caution label(HE)	Not used	VRW1297

(2) FOR CLD-1950/HB

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	1	Guide plate (L)	VNE1805	NSP	21	Damp cushion	VEC1110
	2	Guide plate (R)	VNE1806	NSP	22	PCB holder (A)	VNE1875
	3	Lock plate spring	VBH1188		23	Screw	BPZ30P060FCU
	4	Lock plate	VNL1513		24	Screw	BPZ30P080FCU
	5	CD tray	VNK1992		25	Screw	BBZ30P080FCC
	6	Tray ASSY-S	VXX2066		26	Screw	BCZ40P060FZK
NSP	7	LD tray	VNK2550		27	Screw	BPZ20P040FZK
	8	Disc pad (L)	VEC1657		28	Screw	VBA1032
	9	Disc pad (C)	VEC1658		29	Tray rubber	VEB1091
NSP	10	Carry label	VRW1289	NSP	30	Cushion	VEC1618
	11	Bonnet case S	VXX1898		31	Caution label(G)	VRW-329
	12	Door spring	VBH1223		32	Caution label	PRW1018
NSP	13	Laser disc plate	VAM1029		33	.....
	14	Tray panel ASSY-S	VXX1931				
	15	CD door	VNK2320				
NSP	16	Tray panel	VNK2319				
	17	Door holder	VNE1905				
	18	Door shaft	VLL1441				
	19	.....				
	20	Damper ASSY	VXA1999				

1.7.3 TOP VIEW SECTION

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	1	Clamper holder	VNL1514		19	Flexible cable (22P)	VDA1448
	2	Rubber sheet	VEB1114		20	Screw	BBZ30P060FMC
	3	Thrust holder	VNL1289	NSP	21	Mechanism ASSY	VWT1108
	4	Clamper head	VNL1615	NSP	22	Caution label (F)	VRW-328
	5	Clamper	VNL1515	NSP	23	PALB ASSY	VWV1355
	6	Clamp spring	VBH1192	NSP	24	YCNR ASSY	VWV1356
	7	Clamper arm	VNE1804	NSP	25	SCRB ASSY	VWV1357
	8	Stabilizer	VNE1807	NSP	26	PC support	VEC1415
	9	Rack ASSY	VWT1099	NSP	27	PCB holder(A)	VNE1875
	10	Carriage shaft	VLL1434	NSP	28	PCB holder(B)	VNE1880
NSP	11	Side stay (R)	VNE1810	NSP	29	P plate holder	PNY-405
NSP	12	Front angle	VNE1808		30	Screw	BBZ30P060FMC
	13	Screw	CPZ20P050FMC		31	Housing ASSY (2P)	VKP2048
	14	Screw	BBZ30P080FCC		32	Flexible cable (28P)	VDA1461
	15	Screw	IBZ30P060FCC		33	Connector ASSY	PF06PP-C20
	16	Screw	IPZ30P060FMC				
NSP	17	Earth plate	VNE1518		34	Connector ASSY	PF03PP2C22
	18	Screw	PCZ30P060FMC				

1.7.4 FRONT PANEL SECTION

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
NSP 1	PWSB ASSY	VWG1526	NSP 11	Front panel	VNK2693
2	Power button	VNK2329	12	FL lens	VEC1631
3	LED lens	PNW2019	13	Skip key L	VNK2322
4	FLKY ASSY	VWG1525	14	Skip key R	VNK2323
5	Name plate	VAM1032	15	Snap plate	VNE1102
6	Ten key	VNK2331	16	Headphone knob	PAC1707
7	Main key	VNK2324	NSP 17	Jack holder	VNE1609
8	LED lens A	VNK2325	NSP 18	HEPB ASSY	VWV1367
9	Shuttle knob	VNK2321	19	Screw	BPZ26P060FCU
NSP 10	Sub panel	VNK2692	20	Front panel ASSY-S	VXX2049
			21	Damp cushion	VEC1110

1.7.5 BASE SECTION

(1) CONTRAST OF CLD - 1950/HB AND CLD - 1950/HEZ.

CLD - 1950/HB and CLD - 1950/HEZ have the same construction except for the following :

Mark	No.	Symbol & Description	Part No.	
			CLD - 1950/HB	CLD - 1950/HEZ
△	3	SYPS ASSY	VWR1220	VWR1219
	5	Power cord with plug	PDG1055	PDG1003
	7	Rear panel	VNA1434	VNA1431
△	28	Fuse(T5A)	PEK1003	Not used

(2) FOR CLD - 1950/HB

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.	
△	1	MAIN ASSY	16	Insulator	PNW1912	
	2	Cord stopper	NSP 17	Base chassis	VNA1255	
△	3	SYPS ASSY	18	Insulator ASSY	VXA1881	
	4	Tray stopper	19	Screw	BBZ30P080FCC	
△	5	Power cord with plug	20	Screw	BBZ30P040FMC	
	6	PCB spacer	21	Screw	BCZ40P060FZK	
	7	Rear panel	22	Screw	BCZ30P080FMC	
△	8	Fuse (T500mA)	23	Screw	BPZ30P140FMC	
NSP	9	Cord clamber	NSP 24	Heat shink	VNE1854	
NSP	10	PCB hinge	25	.....	
△	11	Power transformer	26	Screw	BCZ30P060FCC	
△	12	Fuse (T3.15A)	NSP 27	VDTB ASSY	VWS1131	
NSP	13	P. plate holder	△	28	Fuse(T5A)	PEK1003
NSP	14	Side stay (L)	NSP 29	Rear angle	VNE1844	
NSP	15	Cord clamber				

1.7.6 MECHANISM SECTION

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	1	Mechanism base	VNK1990		16	R-SW lever	VNL1506
	2	.....		NSP	17	LOSB ASSY	VWG1419
	3	Clamp cam	VNL1621		18	Synchro gear ASSY	VXA1822
	4	Shaft holder	VNE1817		19	Roller	VNL1042
	5	Cam plate	VNL1511	NSP	20	LOMB ASSY	VWG1420
	6	CAS spring	VBH1190		21	Loading motor ASSY	VXX1712
	7	Cam gear	VNL1507	NSP	22	Slider motor	VXMI033
	8	CD plate	VNL1512		23	Motor pulley	PNW1643
	9	CDP spring	VBH1191		24	Screw	Z39-019
	10	Rubber belt	VEB1184		25	Screw	BMZ26P040FMC
	11	Gear pulley	VNL1510				
	12	Twin gear	VNL1508				
	13	Center gear	VNL1509				
	14	L-SW lever	VNL1504				
	15	C-SW lever	VNL1505				

1.7.7 MECHANISM ASSY

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	1	CA belt	VEB1077		16	Y gear	VNL1501
	2	CA pulley (2)	VNL1496		17	Tilt cam spring	VBH1189
	3	CA gear (3)	VNL1497		18	Tilt cam	VNL1502
	4	Tilt base	VNL1499		19	Spindle motor ASSY	VXA2108
	5	CA-SW lever	VNL1498		20	Centering hab	VNL1174
NSP	6	CAMB ASSY	VWG1418		21	Centering spring	VBH1083
	7	Carriage motor ASSY	VXX1261	NSP	22	Rubber sheet	VEB1103
NSP	8	Carriage motor	VXMI033	NSP	23	Turn table ASSY	VXA1283
	9	CA pulley (1)	VNL1197	NSP	24	Oil stopper	VBFI002
NSP	10	PASB ASSY	VWG1417	NSP	25	Spindle motor	VXMI053
	11	Radial spring	VBH1201		26	Motor base	VNE1803
	12	Thrust spring	VBH1200		27	Screw	BMZ26P040FMC
	13	Tilt tension spring	VBH1187		28	Screw	ABZ30P300FMC
NSP	14	FG ASSY	VWG1416		29	Screw	PMA30P050FMC
	15	FG. base	VNL1503		30	Washer	WT26D060D025
					31	Housing ASSY	VKP2020

1.7.8 RACK ASSY

Mark	No.	Description	Parts No.
NSP	1	Sensor stay	VBK1036
NSP	2	Tilt sensor	SG-302
NSP	3	Pickup ASSY	VWY1036
	4	Rack	VNL1495
	5	Tan. base	VNL1494
	6	Screw	PBB26P080FMC
	7	Screw	PMA20P060FMC
	8	Screw	PMA20P080FMC
	9	Screw	PMH20P040FMC
	10	Screw	SMZ20H120FZK

1.8 PCB PARTS LIST

NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The Δ 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 ¹	→	561	.....	RD1/8PM	5 6 1 J
47kΩ	→	47 × 10 ³	→	473	.....	RD1/4PS	4 7 3 J
0.5Ω	→	0R5	.....			RN2H	0 R 5 K
1Ω	→	010	.....			RS1P	0 1 0 K

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

5.62kΩ	→	562 × 10 ¹	→	5621	RN1/4PC	5 6 2 1 F
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Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
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LIST OF ASSEMBLIES

NSP	FLKB ASSY	VWM1474
	└─ FLKY ASSY	VWG1525
NSP	└─ PWSB ASSY	VWG1526
NSP	└─ HEPB ASSY	VWV1367
	SYPS ASSY(HB TYPE)	VWR1220
	SYPS ASSY(HEZ TYPE)	VWR1219

Note : Although VWR1220 and VWR1219 are different in part number, they have the same service parts.

	MOTHER ASSY	VWM1461
	└─ MAIN ASSY	VWX1206
	VTPB ASSY	VWM1457
NSP	└─ VDTB ASSY	VWS1131
NSP	└─ PALB ASSY	VWV1355
NSP	└─ YCNR ASSY	VWV1356
NSP	└─ SCRB ASSY	VWV1357
NSP	MACBS ASSY	VWM1358
NSP	└─ FG ASSY	VWG1416
NSP	└─ PASB ASSY	VWG1417
NSP	└─ CAMB ASSY	VWG1418
NSP	└─ LOSB ASSY	VWG1419
NSP	└─ LOMB ASSY	VWG1420

FLKB ASSY

OTHERS	PCB(FLKB)	VNP1466
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FLKY ASSY

SEMICONDUCTORS

IC201	PD3274A
IC202	S-806D
Q203	DTA144ES
Q202	DTC114ES
Q201,Q204	DTC124ES
D203-D206	1SS252
D201	1SS254
D210	PG3361X

SWITCHES AND RELAYS

S201 - S204, S206, S210, S214	RSG1030
S217 - S225	RSG1030
S205, S207 - S209, S211 - S213	RSG1034
S215, S216	RSG1034
S228	VSD1008

CAPACITORS

C204	CEAL100M16
C201	CEAL101M6R3
C206	CEAL2R2M50
C207	CEAS100M16
C205	CKPUYF103Z25
C202, C203	CKPUYF223Z25

RESISTORS

R230	RAST104J
Other Resistors	RD1/6PM□□□J

OTHERS

4P Cable holder	51048-0400
X201 Ceramic resonator	EFOEC8004A4
Remote sensor	GP1U58X
V201 FL Tube	VAW1033
J21 Flat cord(4P)	VDA1440
Spacer	VEC1599
FL Holder	VNF1078

PWSB ASSY

SEMICONDUCTORS

D211	SLH34VCF04
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SWITCHES AND RELAYS

S226	RSG1030
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RESISTORS

All Resistors	RD1/6PM□□□J
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HEPB ASSY

COILS AND FILTERS

F201 - F203	VTH1016
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Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
CAPACITORS			△	R32	RD1/2VM1R5J
C208		CGCYF473Z25	△	R23-R26	RD1/2VM221J
C209,C210		CKPUYB101K50		Other Resistors	RD1/6PM□□□J
RESISTORS			OTHERS		
VR201	(0.5KB)	VCS1015		6P Cable holder	51048-0600
OTHERS			CN31	KR Connector	B2B-PH-K-S
CN204	3P Jumper connector(2MMP)	52151-0310		Capacitor cover	REC-150
JA201	Headphone jack	RKN1002	△	Power supply terminal	VKC-019
SYPS ASSY			△	Taping fuse holder	VKR1001
SEMICONDUCTORS				Coil cover	VNE1857
△	IC205	ICP-N10		Earth plate	VNF-091
△	IC204	ICP-N15	J1	Earth lead unit	XDF-511
△	IC201-IC203	ICP-N20	MAIN ASSY		
△	IC2	NJM4558D	SEMICONDUCTORS		
△	IC1	NJM78L05A	IC202,IC205,IC903		BA4560F
△	IC41	NJM78M12FA	IC351		CA0002AM
	Q5,Q22,Q23,Q29	2SA933S	IC803		LA6510L
△	Q60,Q61	2SB1185	IC802		LC78681E
	Q31	2SB1240	IC206		NJM78L06A
△	Q25,Q27	2SB1566			
	Q4,Q21,Q24	2SC1740S	IC207		NJM79L06A
△	Q3	2SD1762	IC801		PAC002A
△	Q26,Q28	2SD2395	IC901		PAC003A
	Q32	DTC114TS	IC101		PD0193A
	Q30	DTC124ES	IC201		PD2026B
△	D23,D26	10ELS2	IC902		TA8464K
△	D3,D41,D42	11ES2	Q102,Q154,Q802,Q963		2SA1037K
△	D2,D24,D25	1SR35-100AVL	Q501		2SA933S
△	D21,D22	1SS254	Q834		2SB1237X
△	D7	MTZJ12B	Q201,Q202,Q801,Q805		2SC2412K
△	D1	S4VB20F	Q903-Q905,Q907,Q913		2SC2412K
COILS AND FILTERS			Q152,Q803,Q804		2SC3802K
△	L51	VTL-004	Q204,Q205		2SD2144S
△	L1	VTL1043	Q962		2SK184
CAPACITORS			Q203,Q207-Q213		DTA124EK
C31		CEAS100M16	Q103,Q104,Q206,Q502,Q503		DTC124EK
C30		CEAS101M10	D202		11EQS06
C10,C29		CEAS101M50	D101,D102,D205-D208,D502		1SS254
C42		CEAS220M25	D520,D905,D963,D964		1SS254
C26		CEAS2R2M50	D201		FC54M
C3-C6		CEAS470M10	COILS AND FILTERS		
C13		CEAS471M16	L201-L204,L206-L208		LAU010J
C41		CEAS471M35	L802-L804		LAU121J
C25		CEJA2R2M50	L351		LAU181J
△	C14,C23,C24	CGCYX473M25	L205,L352,L800,L801		LAU220J
	C11,C12	CKPUYF103Z25	F201		VTH1016
△	C61-C63	CKPUYF223Z25	CAPACITORS		
	C27,C28	CQMA223J50	C159,C809,C811		CCSQCH100D50
	C21,C22	CQMA272J50	C108,C109,C120,C121		CCSQCH101J50
△	C52 (0.01,AC400V)	VCG-048	C258,C259,C370		CCSQCH101J50
	C1,C2 (16MM,3L)	VCH1053	C814,C846,C848		CCSQCH121J50
△			C232		CCSQCH150J50
RESISTORS			C161,C353,C810		CCSQCH151J50
R41	(4R7,1/6W)	DCN1001	C352		CCSQCH180J50
△	R27-R30 (47,1/6W)	DCN1003	C812		CCSQCH221J50
	R36	RD1/2PMR47J	C371		CCSQCH270J50
			C208,C209		CCSQCH271J50

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
C106,C107,C354,C813		CCSQCH330J50	R501		RD1/6PM471J
C351,C931		CCSQCH390J50	R909		RD1/6PM473J
C260-C263,C963		CCSQCH470J50	R502		RD1/6PM563J
C375,C806		CCSQCH680J50	R507		RD1/6PM822J
C374		CCSQCH820J50	R259-R262		RN1/10SE473D
C902		CEAL2R2M50	VR606		VRTB6VSI53
C893,C933		CEAL470M6R3	VR601		VRTB6VS222
C871		CEALNP100M16	VR605		VRTB6VS333
C522		CEANP100M16	VR603		VRTB6VS472
C926		CEANP2R2M50	VR604,VR607,VR612		VRTB6VS473
C838		CEANP470M6R3		Other Resistors	RS1/10S□□□J
C904		CEAS010M50			
C228,C274,C275,C367,C845		CEAS100M50	OTHERS		
C225,C226,C256,C364,C895		CEAS101M10		3P Cable holder	51048-0300
C227,C281		CEAS2R2M50		5P Cable holder	51048-0500
C101,C230,C252,C253,C363		CEAS470M10		11P Cable holder	51048-1100
C369,C801,C803,C833,C836		CEAS470M10	CN103	22P FFC Connector	52045-2245
C842,C844,C927,C974,C975		CEAS470M10	CN106	11P Top post	B11P-SHF-1AA
C207,C255,C257,C270,C271		CEAS471M10			
C279		CEAS471M10	CN516	KR Connector	B3B-PH-K-R
C368,C913		CEASR47M50	CN110	5P Top post	B5B-EH
C970		CEHAQ010M50	CN101	KR Connector	B5B-PH-K-S
C967,C968		CEHAQ100M50	CN504	KR Connector	B6B-PH-K-S
C987		CEHAQ220M50	J1	2mm Pitch flat cable11P	D20PDY1120G
C365,C908,C910		CFTYA104J50	JA3,JA4	Remote control jack	RKN1004
C359,C360,C905		CFTYA224J50	CN105	2mm Pitch jumper connector(6P)	SBRK06S-4
C521		CFTYA563J50	CN501	1.0mm Pitch FFC Connector	SLW28S-1C7
C891,C914,C936,C969		CKSQYB102K50	JA8	Optical output jack	TOTX178
C110,C888,C907		CKSQYB222K50		PCB Binder	VEF1040
C361,C362		CKSQYB392K50	JA6	2P Pin jack	VKB1031
C355-C358		CKSQYB472K50	JA2	64P Shrink IC socket	VKH1004
C105,C122,C160,C213,C231		CKSQYF103Z50		Mini jack	VKN1165
C234,C251,C286,C288,C376		CKSQYF103Z50		Screw terminal	VNE1841
C523,C807,C834,C835,C843		CKSQYF103Z50		IC Heat sink(AL)	VNE1921
C872,C876,C894,C929		CKSQYF103Z50		Earth plate	VNF-091
C961,C962		CKSQYF103Z50	X101	Ceramic resonator	VSS1040
C102,C151,C196-C198,C215		CKSQYF104Z25	X201	Crystal resonator(16MHz)	VSS1057
C254,C284,C285,C305		CKSQYF104Z25		VDTB ASSY	
C308,C309,C366,C372,C373		CKSQYF104Z25		SEMICONDUCTORS	
C802,C804,C831,C832		CKSQYF104Z25	IC203,IC602		BA4560F
C840,C841,C873,C874,C892		CKSQYF104Z25	IC403		CXL1009P
C896,C901,C915,C928,C932		CKSQYF104Z25	IC404		PA0017-P
C981		CKSQYF104Z25	IC401		PA5013A
C837,C930		CKSQYF333Z25	IC201		PD3239A
C103,C210,C214,C808,C815		CKSQYF473Z25	IC402		PM0001
C847,C875,C877,C911,C912		CKSQYF473Z25	IC601		PM3002
C925,C964,C971,C983,C984		CKSQYF473Z25	IC207		TC4W53F
C934		CQMA122J50	IC202		TC7SU04F
C903,C909		CQMA222J50	Q204,Q207,Q406,Q407,Q411		2SA1037K
C278,C282		CQMA332J50	Q456,Q496,Q502,Q511		2SA1037K
			Q703,Q704		2SA1037K
RESISTORS			Q401		2SB1237X
R192,R193		RD1/6PM220J	Q431		2SC1740S
R505		RD1/6PM331J	Q202,Q203,Q205,Q206		2SC2412K
R180		RD1/6PM333J			
R212,R213,R220,R221		RD1/6PM470J			
R839,R840		RD1/6PM470J			

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
Q208-Q210,Q404,Q408 Q497-Q501,Q601-Q605,Q608 Q700-Q702 Q409 Q402		2SC2412K 2SC2412K 2SC2412K 2SC3802K 2SD1858X	C551,C613,C620 C537 C522 C472,C477 C213,C434,C445,C452,C499		CEANP220M10 CEAS010M50 CEAS100M50 CEAS3R3M50 CEAS470M16
Q201,Q403,Q405,Q606,Q609 Q621-Q623 Q607,Q610,Q612,Q613 Q624,Q625 D401,D601,D602,D609,D610		DTA124EK DTA124EK DTC124EK DTC124EK 1SS254	C484 C473 C201,C220-C222,C227,C428 C457,C474,C489,C490 C501,C502,C512,C521,C525		CEJA100M16 CEJA3R3M50 CEJA470M6R3 CEJA470M6R3 CEJA470M6R3
D201 D203		DAN202K SVC201 SPA	C533,C622,C624,C643,C647 C675,C676 C401,C405,C619 C443,C625,C628 C223		CEJA470M6R3 CEJA470M6R3 CEJANP2R2M50 CEJANP4R7M16 CEJANPR47M50
COILS AND FILTERS					
L203,L204,L208,L412-L415 L521 L206,L207 L430 L497		LAU120J LAU120J LAU121J LAU150J LAU151J	C446,C618 C514 C224 C471,C603 C610,C617		CFTYA103J50 CFTYA104J50 CFTYA223J50 CFTYA224J50 CFTYA563J50
L201,L202,L209 L496,L701 L702 L525 L523		LAU1R2J LAU220J LAU270J LAU330J LAU390J	C515,C517 C202,C209,C214-C217 C225,C226,C230,C232,C233 C242,C414,C418,C421,C422 C425,C426,C458-C460		CFTYA683J50 CKSQYF103Z50 CKSQYF103Z50 CKSQYF103Z50 CKSQYF103Z50
L432 L433 L522 L411,L431 L458		LAU430J LAU470J LAU560J LAU680J LFA221J	C475,C476,C486,C535,C602 C604,C615,C616,C621,C644 C776,C777,C780,C781,C783 C403,C404,C427,C429,C435 C442,C479-C481,C483		CKSQYF103Z50 CKSQYF103Z50 CKSQYF103Z50 CKSQYF104Z25 CKSQYF104Z25
L457,L524 F201		LFA561J VTF1051	C503-C506,C511,C513,C526 C531 C407,C408,C466,C467 C487,C488,C527,C601,C629 C219,C605-C607,C626		CKSQYF104Z25 CKSQYF104Z25 CKSQYF473Z25 CKSQYF473Z25 CQMA102J50
CAPACITORS					
C203,C431,C438,C441 C207,C231,C241,C415,C417 C500,C532,C774 C212,C238,C419,C461,C496 C430		CCSQCH050C50 CCSQCH100D50 CCSQCH100D50 CCSQCH101J50 CCSQCH120J50	C608 C627 C444,C611 C614 C218		CQMA152J50 CQMA222J50 CQMA272J50 CQMA332J50 CQMA472J50
C456 C439,C440,C516,C520 C509,C550,C771,C772 C409,C423,C424,C485,C529 C612,C633		CCSQCH121J50 CCSQCH150J50 CCSQCH151J50 CCSQCH180J50 CCSQCH180J50	VC201 VC202 VC203		PCM1001 VCM-008 VCM1005
C410,C437 C236 C204,C208,C416,C495,C510 C775,C779 C402,C463,C507,C508		CCSQCH220J50 CCSQCH221J50 CCSQCH270J50 CCSQCH270J50 CCSQCH271J50			
C206,C240,C462 C211,C433,C524,C528 C406 C205,C239,C455 C549,C778		CCSQCH330J50 CCSQCH390J50 CCSQCH391J50 CCSQCH470J50 CCSQCH560J50			
C237 C411,C412,C498,C609 C536 C651 C530		CCSQCH680J50 CCSQCH820J50 CCSQCH910J50 CCSQSL102J50 CEANP100M25			
RESISTORS					
			R496 R406 R403 R431 R512,R519,R520 R612,R613 R771 R231,R475,R521 R438 R511		RD1/6PM101J RD1/6PM224J RD1/6PM271J RD1/6PM510J RD1/6PM680J RN1/10SE103D RN1/10SE202D RN1/10SE562D RN1/6PQ1803F RN1/6PQ2002F

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
R415,R416		RN1/6PQ3002F	C341,C354,C358,C362		CEAS470M16
R434		RN1/6PQ5101F	C309		CEJA100M16
VR201		VRTB6VS222	C303		CEJA3R3M50
VR441		VRTB6VS223	C319,C323,C336,C339,C360		CEJA470M6R3
VR481,VR482,VR521		VRTB6VS472	C373,C375,C380-C382,C386		CEJA470M6R3
	Other Resistors	RS1/10S□□□J	C388,C390		CEJA470M6R3
			C367		CEJANP220M10
OTHERS			C314		CFTYA223J50
	5P Cable holder	51048-0500	C301,C305,C308,C318		CKSQYF103Z50
	7P Cable holder	51048-0700	C320-C322,C324,C328,C329		CKSQYF103Z50
	12P Cable holder	51048-1200			
CN603	1.0mm Pitch FFC connector	SLW28S-1C7	C335,C351,C353,C355,C357		CKSQYF103Z50
	PCB Binder	VEF1040	C359,C361,C363,C366,C369		CKSQYF103Z50
JA14	1P Pin jack	VKB1063	C374,C376,C385,C395,C396		CKSQYF103Z50
JA11	4P Mini DIN socket	VKN1072	C334,C340,C342,C389,C391		CKSQYF104Z25
	Screw terminal	VNE1841	C302		CQMA392J50
X202	Crystal resonator(14.32MHz)	VSS1029	RESISTORS		
X203	Crystal resonator(17.73MHz)	VSS1059	R339,R387		RD1/6PM101J
			R355,R361		RD1/6PM470J
			R306,R307		RD1/6PM751J
			R316		RN1/10SE562D
			R323		RN1/6PQ2401F
			VR304		VRTB6VS222
			VR302		VRTB6VS471
PALB ASSY				Other Resistors	RS1/10S□□□J
SEMICONDUCTORS			OTHERS		
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			
Q302,Q308,Q309,Q311		2SC2412K	CN303	KR Connector	B6B-PH-K-S
Q321,Q322,Q352,Q353		2SC2412K	CN301	3P Side post	B53P-SHF-1AA
Q355,Q356,Q359,Q360,Q953		2SC2412K	X301	Crystal resonator(8.87MHz)	VSS1062
Q301,Q304,Q307,Q312,Q313		DTA124EK			
Q317,Q320,Q351		DTA124EK	YCNR ASSY		
Q305,Q306,Q318		DTC124EK	SEMICONDUCTORS		
D301		DAN202K	IC803		BU4053BCF
D302		DAP202K	IC801		CXD2024Q
			IC804		TA7302P
COILS AND FILTERS			Q804,Q807,Q809,Q811,Q814		2SA1037K
L302,L303,L355		LAU120J	Q821,Q822,Q827-Q829		2SA1037K
L304		LAU220J			
L301		LAU270J	Q837,Q838		2SA1037K
F303		VTF1034	Q825		2SA933S
			Q802,Q803,Q806,Q808,Q810		2SC2412K
CAPACITORS			Q815-Q817,Q820,Q823,Q824		2SC2412K
C312		CCSQCH050C50	Q830,Q831,Q836,Q839		2SC2412K
C315		CCSQCH070D50			
C356,C364,C392		CCSQCH101J50	Q840		DTA124EK
C327		CCSQCH151J50	Q801		DTC124EK
C365		CCSQCH181J50			
C316		CCSQCH200J50	COILS AND FILTERS		
C368		CCSQCH220J50	L801,L802,L805-L808		LAU150J
C311,C317		CCSQCH270J50	L803,L804,L810		LAU220J
C306,C307,C310,C325		CCSQCH330J50	L809		LAU470J
C326		CCSQCH390J50			
C352		CCSQSL391J50			
C304		CCSQSL561J50			
C383		CEALNP470M6R3			
C384		CEANP220M10			
C313		CEAS010M50			

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
CAPACITORS			C131,C162,C163	CEJA100M16	
C809,C839,C846,C853		CCSQCH060D50	C132,C157,C161	CKSQYF103Z50	
C897,C916		CCSQCH120J50	C158	CKSQYF473Z25	
C864		CCSQCH180J50	RESISTORS		
C810,C811,C840,C841		CCSQCH220J50	△ R169,R170 (47,1/6W)	DCN1003	
C847,C848,C854,C855		CCSQCH220J50	R160,R164	RD1/6PM471J	
			R140,R141,R159,R163	RD1/6PM750J	
C892,C898		CCSQCH390J50	Other Resistors		
C813,C843,C850,C857,C872		CCSQCH470J50	RSl/10S□□□J		
C812,C842,C849,C856,C873		CCSQCH560J50	OTHERS		
C805		CCSQSL102J50	JA101	RGB Connector	VKB1056
C814		CEAS010M50		Earth plate(FE)	VNF1081
C871		CEJA100M16	MACBS ASSY		
C806,C815,C816,C818,C820		CEJA470M6R3	OTHERS		
C823,C825,C831,C835,C874		CEJA470M6R3	PCB(MACBS)	VNP1396	
C876,C880,C885,C887,C893		CEJA470M6R3	FG ASSY		
C896,C906,C907,C909		CEJA470M6R3	SEMICONDUCTORS		
			D1	Photo interruptor	GPI S51V
C911 - C913		CEJA470M6R3	OTHERS		
C808,C826,C865,C867,C868		CKSQYF103Z50	HOUSING ASS'Y		
C890,C891,C905		CKSQYF103Z50	PASB ASSY		
C807,C817,C819,C821,C822		CKSQYF104Z25	SWITCHES AND RELAYS		
C824,C827 - C830,C832 - C834		CKSQYF104Z25	S4,S5	DSG1015	
C836 - C838,C844,C845		CKSQYF104Z25	OTHERS		
C851,C852,C866,C869,C870		CKSQYF104Z25	HOUSING ASS'Y		
C875,C877,C879,C881		CKSQYF104Z25	CAMB ASSY		
C883,C884,C886,C888		CKSQYF104Z25	SEMICONDUCTORS		
C894,C895,C900,C908,C910		CKSQYF104Z25	Q10	2SC1740S	
C915		CKSQYF104Z25	RESISTORS		
RESISTORS			R10	RD1/4VM182J	
R814,R816		RD1/6PM271J	R11	RD1/4VM470J	
R822		RD1/6PM681J	Other Resistors		
R901		RN1/10SE182D	RD1/6PM□□□J		
R879,R885		RN1/10SE202D	OTHERS		
R818,R820,R886		RN1/10SE222D	CN403	22P Connector	52045 - 2245
R864,R902		RN1/10SE562D	CN404	Connector post	B3B - PH - K - S
VR801		VRTB6VS472	CN402	KR Connector	B3B - PH - K - R
Other Resistors			CN401	23P FFC Connector(Top)	SLEM23S-2
OTHERS				HOUSING ASS'Y	VKP2009
3P Cable holder		51048 - 0300	LOS B ASSY		
4P Cable holder		51048 - 0400	SWITCHES AND RELAYS		
J801	3P Jumper wire	D20PDD0310E	S1 - S3	DSG1015	
DL801,DL802	Filter	VTN1001	LOMB ASSY		
SCR B ASSY			CAPACITORS		
SEMICONDUCTORS			C1	CGCYX473M25	
IC107		LA7955	OTHERS		
Q111,Q112		2SC1740S	4P Cable holder	51048 - 0400	
Q113		DTC124EK	2mm Pitch flat cable(6P)	D20PWY0615G	
D101,D102		MTZJ12B	LOMB ASSY		
CAPACITORS			CAPACITORS		
C137,C141,C145,C149		CCSQCH101J50	OTHERS		
C139,C143,C147,C151		CCSQCH221J50	51048 - 0400		
C133,C134,C138,C140,C142		CEAS100M50	D20PWY0615G		
C144,C146,C148,C150,C152		CEAS100M50	LOMB ASSY		
C159,C160		CEAS100M50	CAPACITORS		
C155		CEAS470M16	C1		
C153,C154		CEAS471M10	OTHERS		

Service Manual

ORDER NO.
RRZ1154

The chapter 1 of this Service Manual will not be reprinted. On your additional orders, we may supply only the chapter 2. For the chapter 1, please make copies and attach to the chapter 2 at your side if necessary.

CD CDV LD PLAYER

CLD-1950

CHAPTER 2

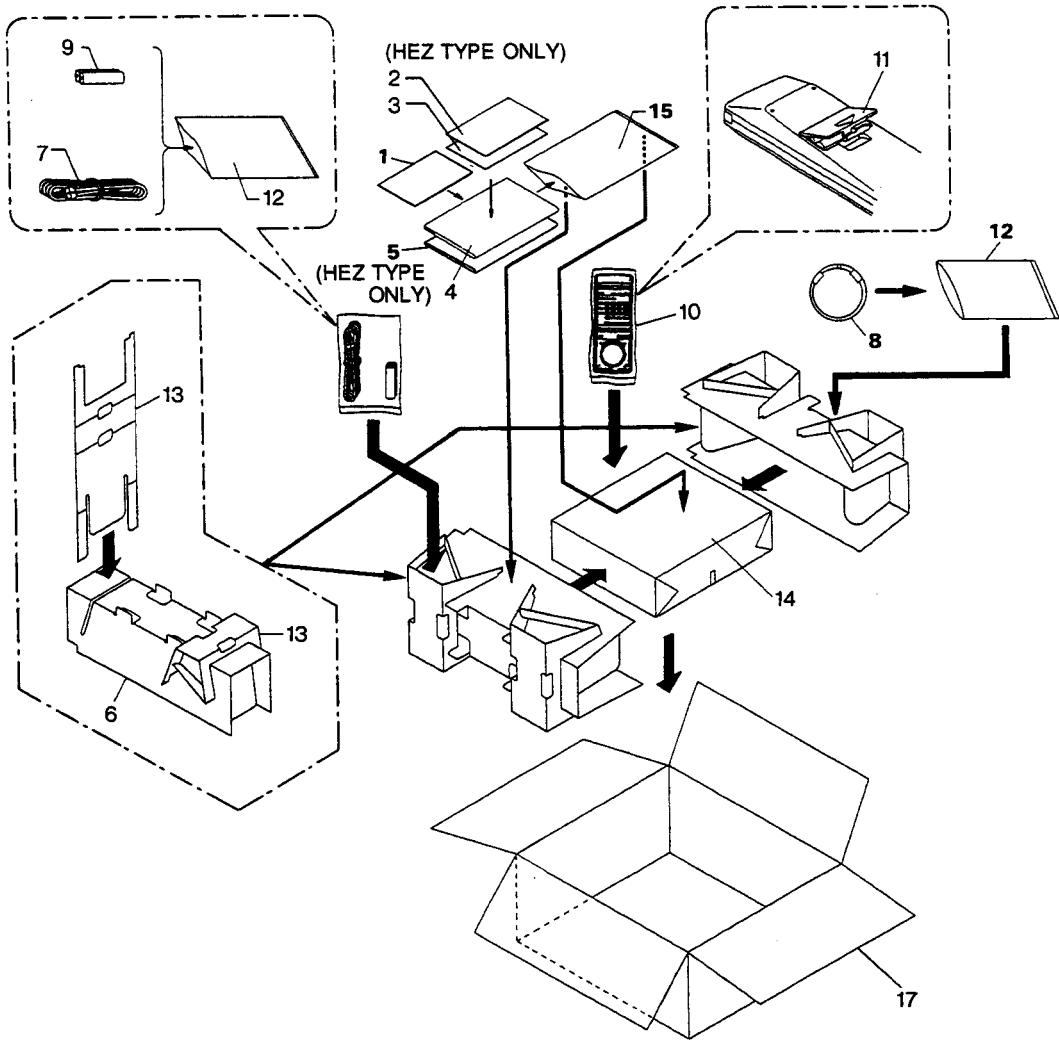
CONTENTS

CHAPTER 2

2.1 PACKING AND EXPLODED VIEWS ...	2-3
2.2 SCHEMATIC AND PCB CONNECTION DIAGRAMS	2-12
2.3 BLOCK DIAGRAMS	2-43

2.1 PACKING AND EXPLODED VIEWS

2.1.1 PACKING



2.1.2 EXTERIOR SECTION

A

A

B

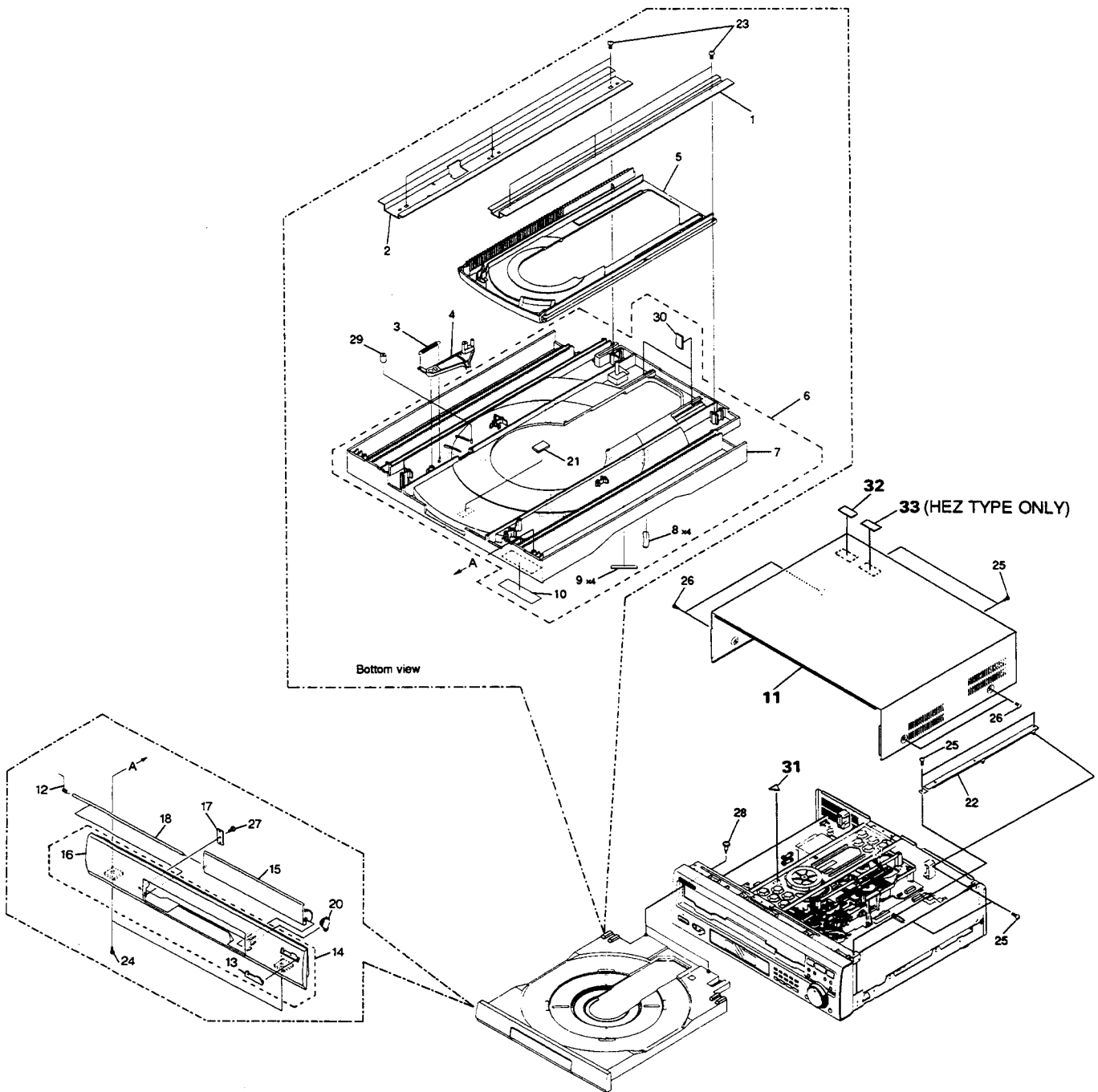
B

C

C

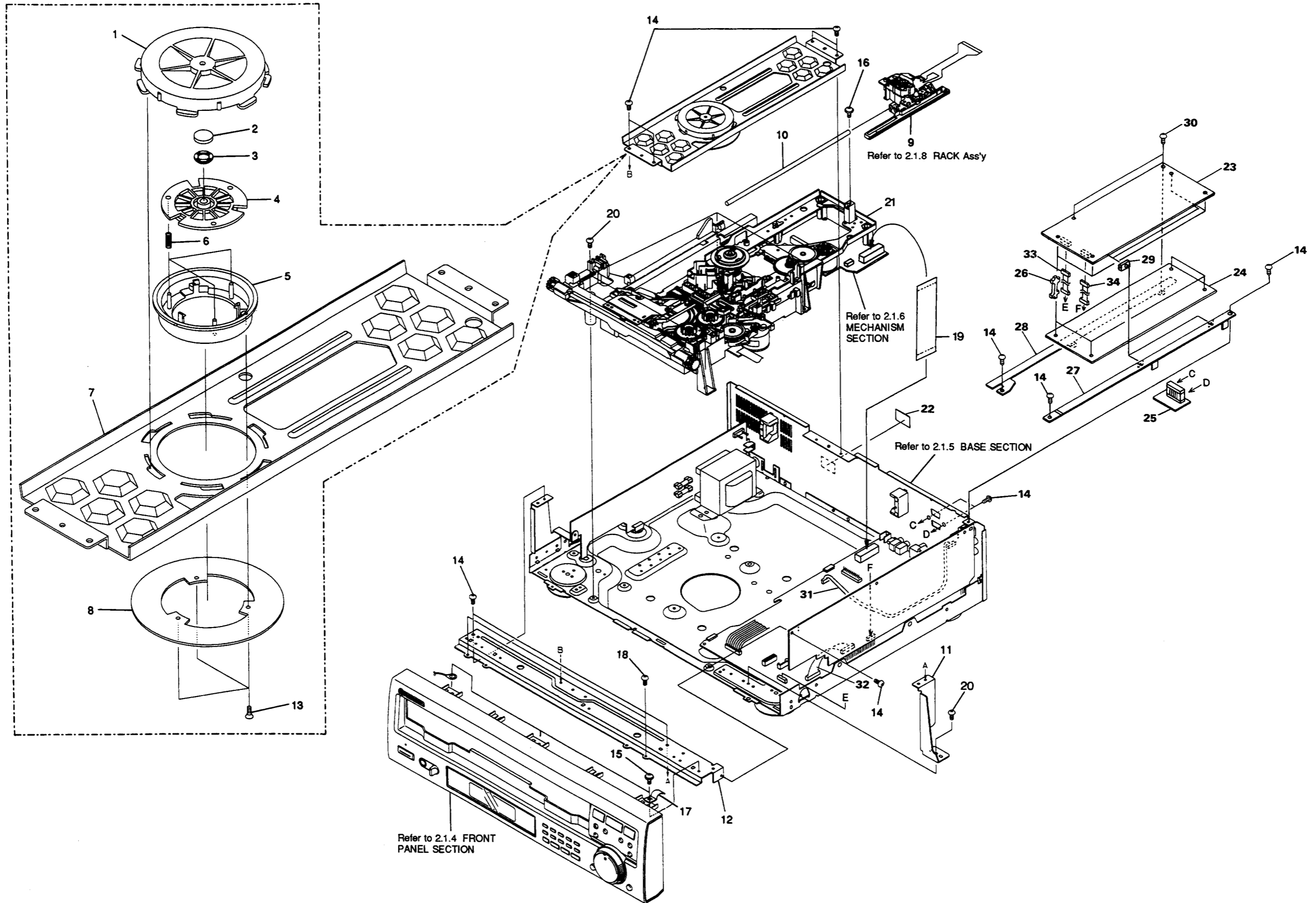
D

D

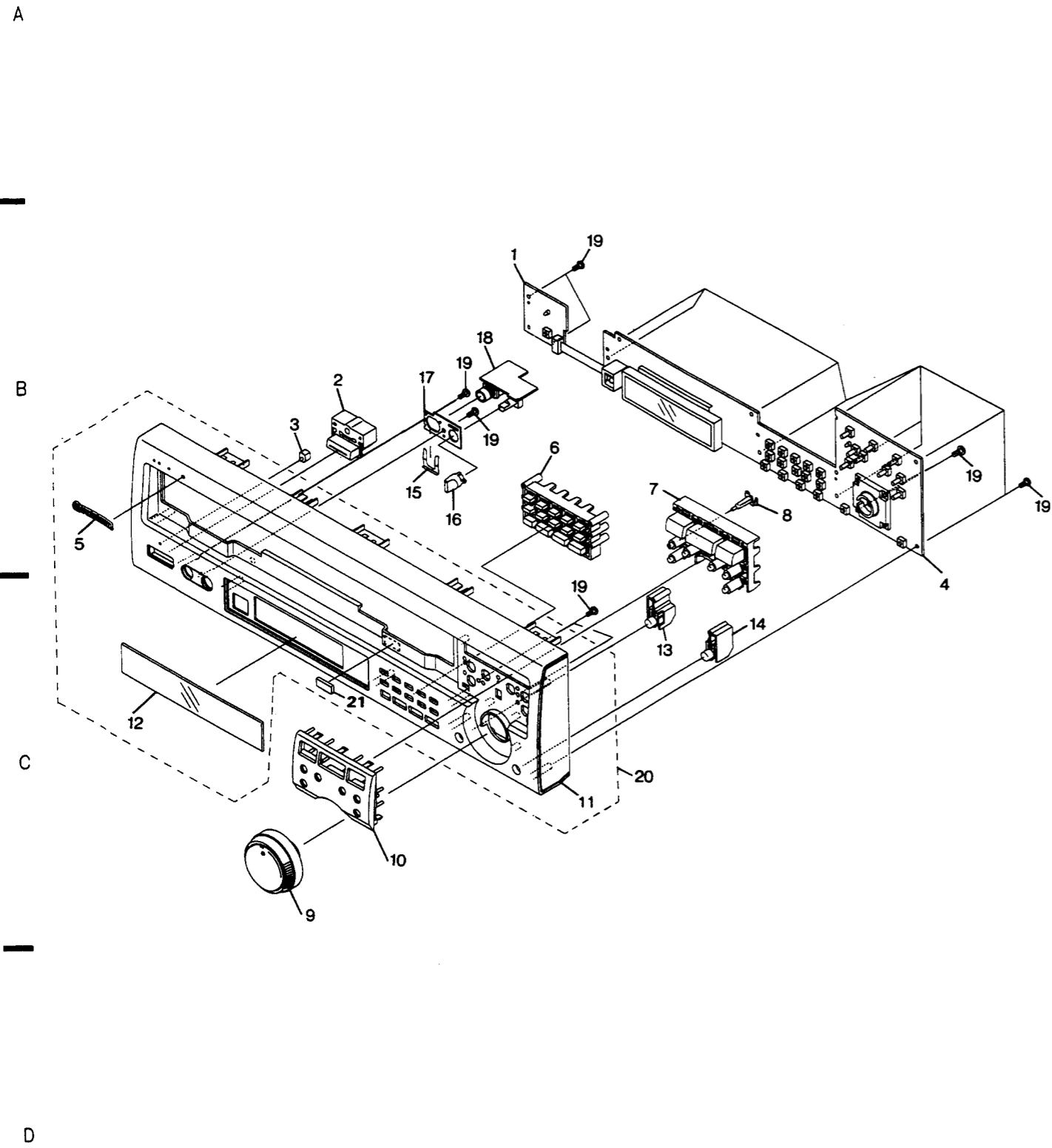


NOTE : Screws adjacent to ▼ mark on product are used for disassembly.

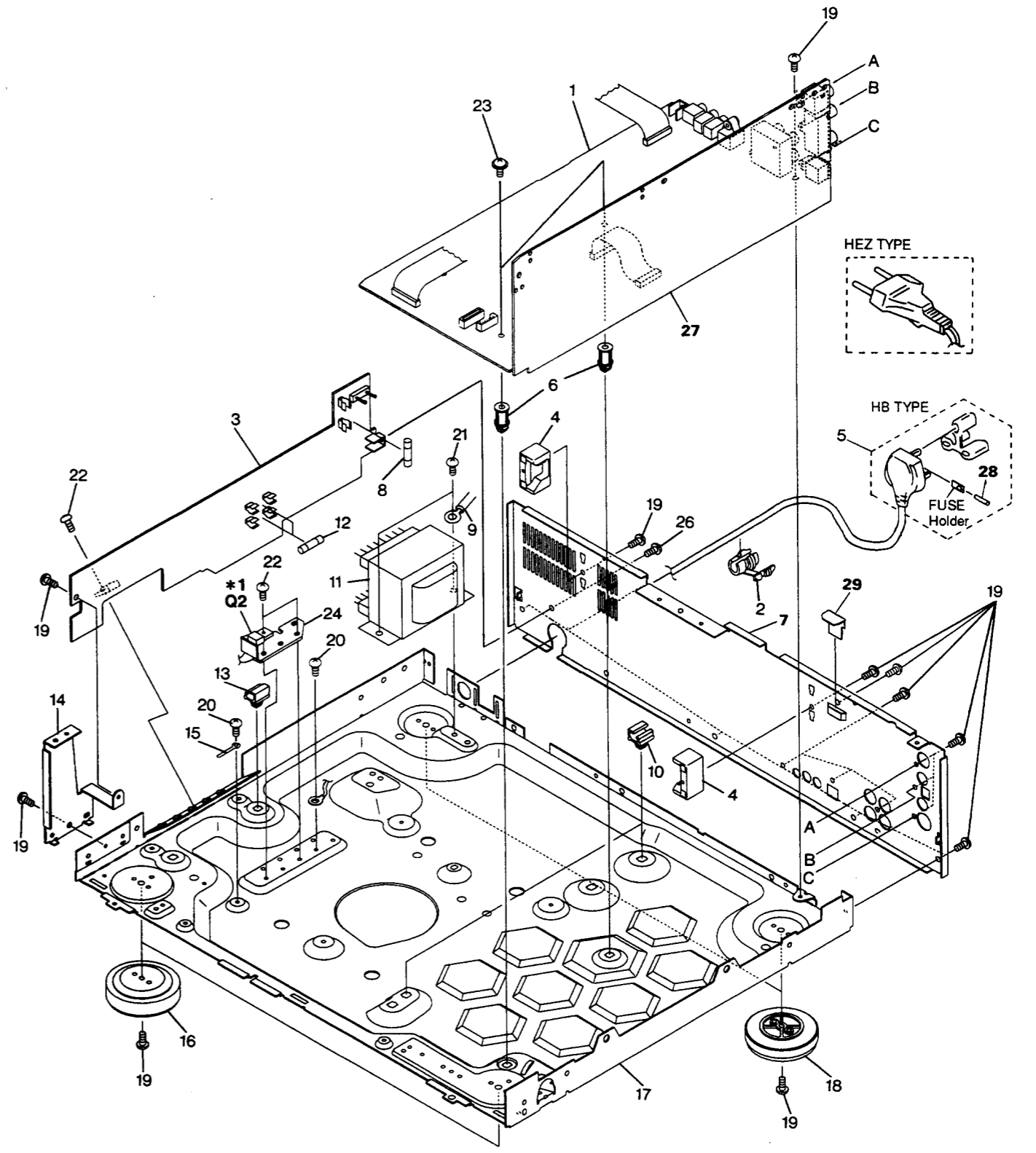
2.1.3 TOP VIEW SECTION



2.1.4 FRONT PANEL SECTION



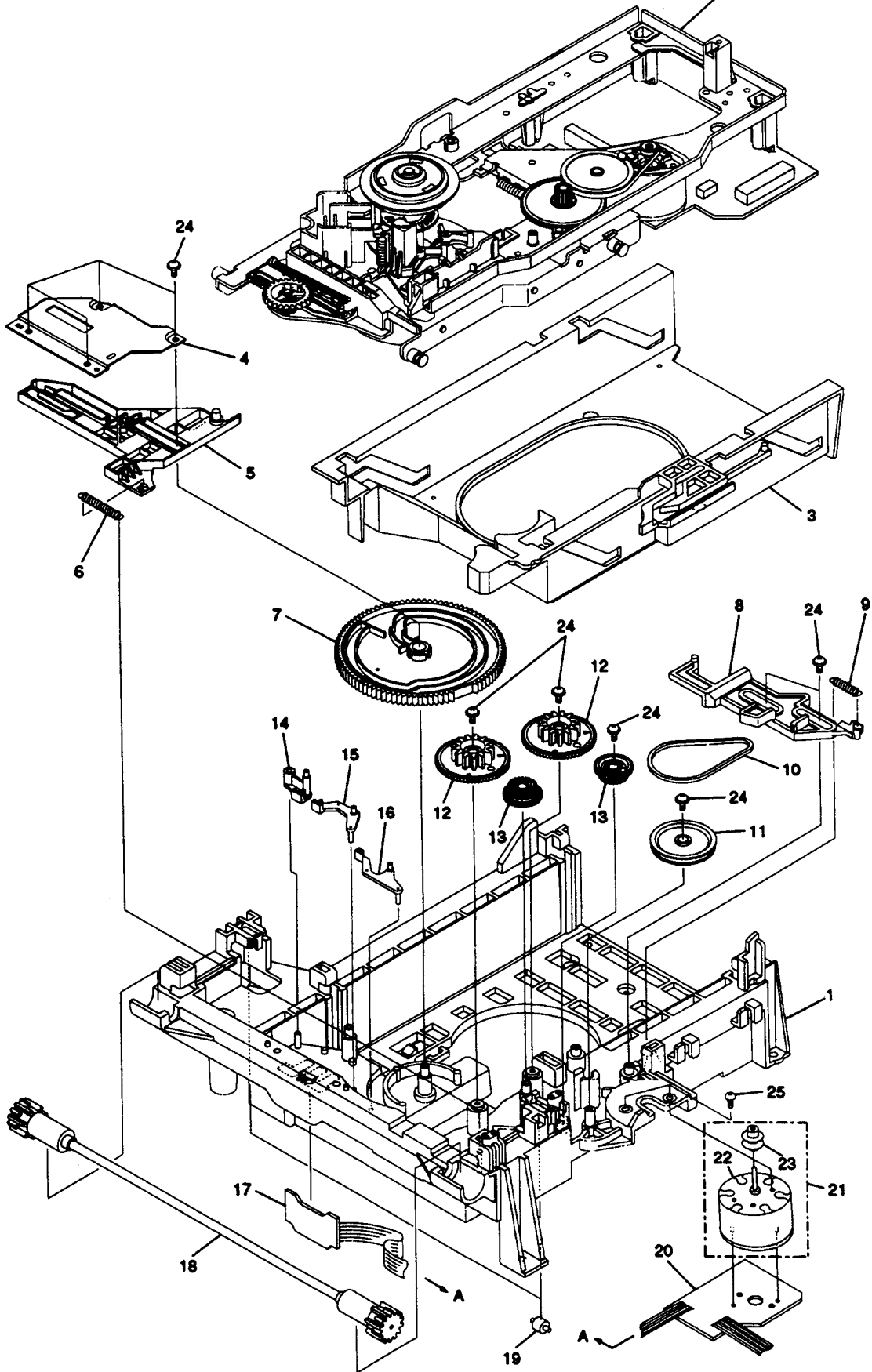
2.1.5 BASE SECTION



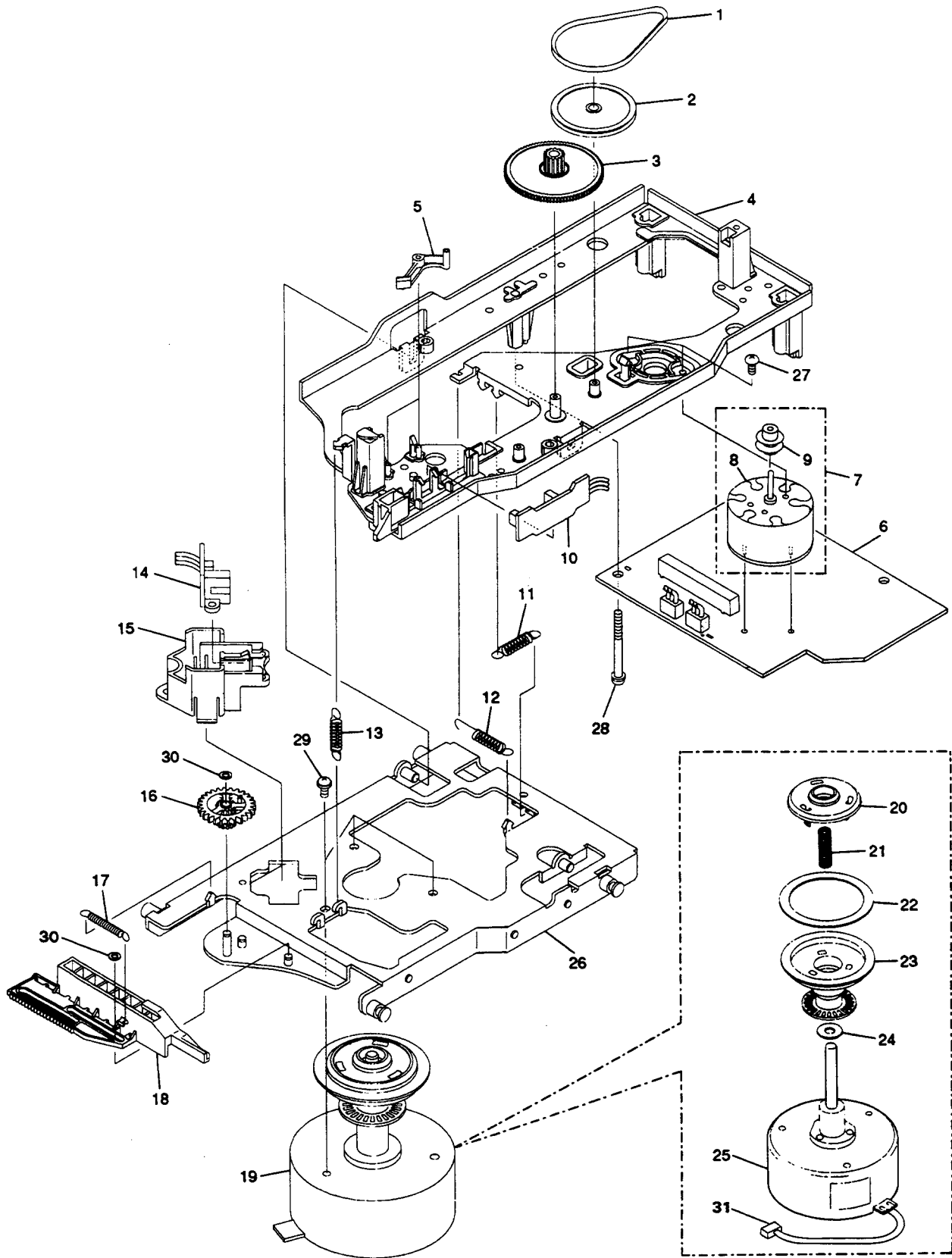
Note :
 * 1 : Q2 is component of the SYPS Ass'y.

2.1.6 MECHANISM SECTION

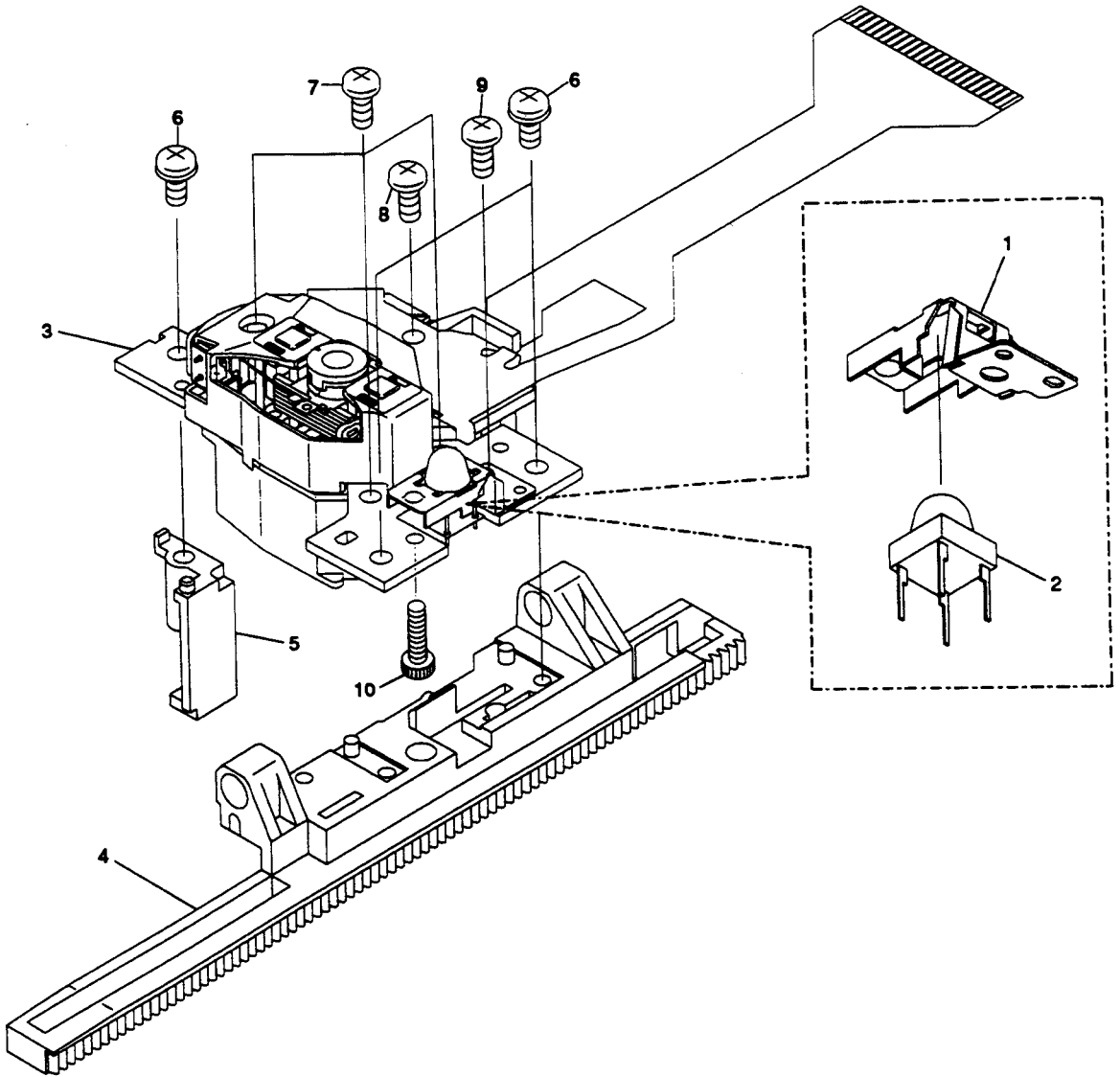
Refer to 2.1.7 MECHANISM Ass'y



2.1.7 MECHANISM ASSY




2.1.8 RACK ASSY








2.2 SCHEMATIC AND PCB CONNECTION DIAGRAMS

NOTE FOR SCHEMATIC DIAGRAMS (Type 4A)

- When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".
- Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.
- RESISTORS:**
Unit: k:k Ω , M:M Ω , or Ω unless otherwise noted.
Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.
Tolerance: (F): $\pm 1\%$, (G): $\pm 2\%$, (K): $\pm 10\%$, (M): $\pm 20\%$ or $\pm 5\%$ unless otherwise noted.
- CAPACITORS:**
Unit: p:pF or $\mu\mu\text{F}$ unless otherwise noted.
Ratings: capacitor (μF) / voltage (V) unless otherwise noted.
Rated voltage: 50V except for electrolytic capacitors.
- COILS:**
Unit: m:mH or μH unless otherwise noted.
- VOLTAGE AND CURRENT:**
 or - V :
DC voltage (V) in PLAY mode unless otherwise noted.
 \varnothing mA or - mA :
DC current in PLAY mode unless otherwise noted.
Value in () is DC current in STOP mode.
- OTHERS:**
 - \odot or \ominus : Adjusting point.
 - \dashv : Measurement point.
 - The Δ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.
- SCH-□ ON THE SCHEMATIC DIAGRAM:**
 - SCH-□ indicates the drawing number of the schematic diagram. (SCH stands for schematic diagram.)
- SWITCHES (Underline indicates switch position):**

FLKY ASSY

S201 : 1	S221 : 4
S202 : 7	S222 : 2
S203 : 	S223 : +10
S204 : 	S224 : PGM EDIT
S205 : 	S225 : 6
S206 : 8	S228 : SCAN (ROTARY ENCODER)
S207 : 	
S208 : 	

PWSB ASSY

S209 : DIRECT CD	S226 : POWER (STAND BY/ON)
------------------	----------------------------

PASB ASSY


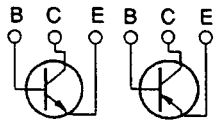

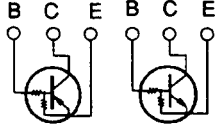

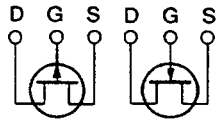
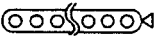
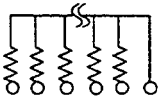

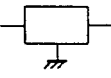
S210 : 9	
S211 : CHAP/TIME	
S212 : HILITE INTRO	S4 : PARK OUT
S213 : D-LEVEL CONTROL	S5 : PARK IN
S214 : 0	

LOSB ASSY

S215 : REPEAT	
S216 : RANDOM PLAY	S1 : TILT, LOADING1
S217 : 5	S2 : TILT, LOADING2
S218 : 3	S3 : TILT, LOADING3
S219 : CLEAR	
S220 : PGM	

NOTE FOR PCB DIAGRAMS:

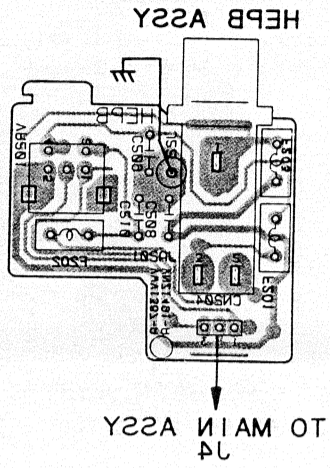
- Part numbers in PCB diagrams match those in the schematic diagrams.
- A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol in PCB Diagrams	Symbol in Schematic Diagrams	Part Name
		Transistor
		Transistor with resistor
		Field effect transistor
		Resistor array
		3-terminal regulator

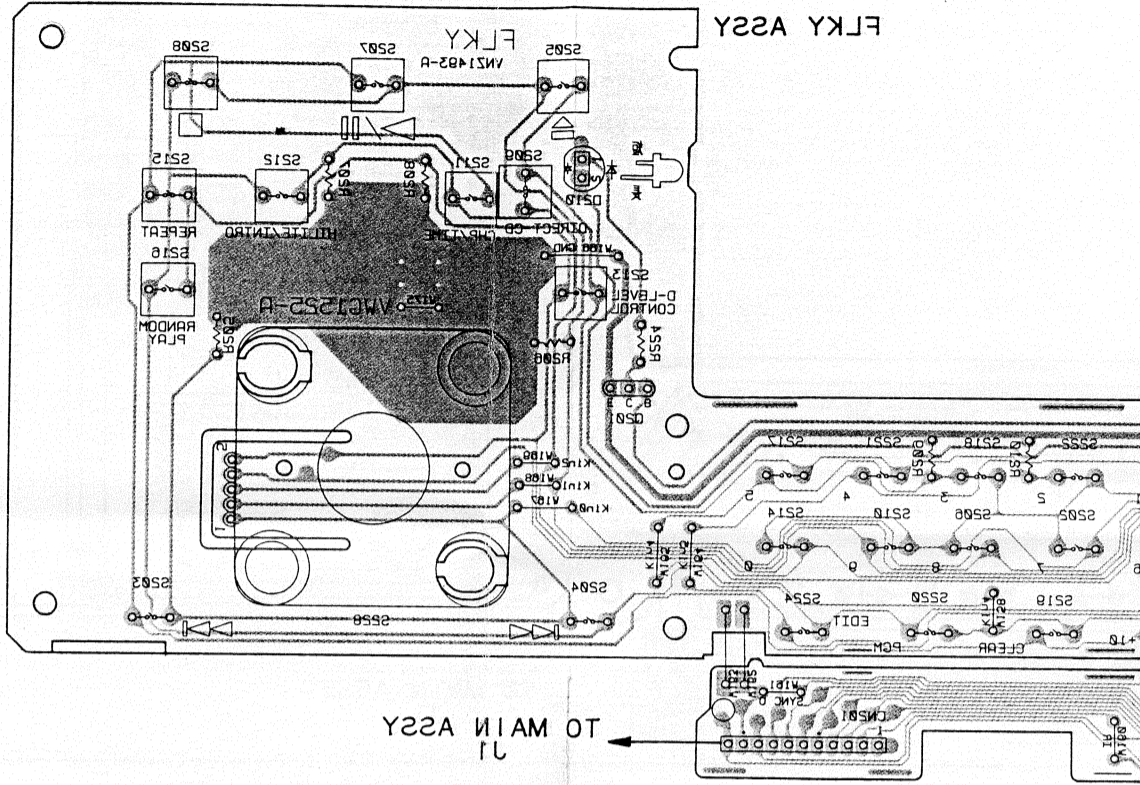
● This diagram is viewed from the foil side.

A

PCB-1



VNP1488-A



0501

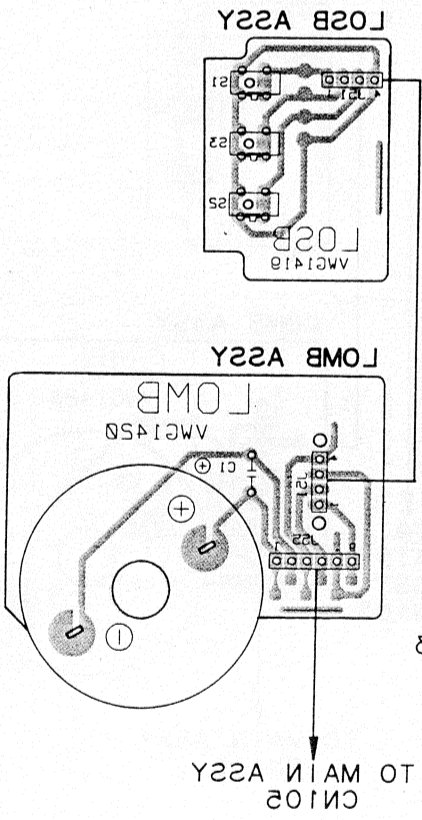
B

C

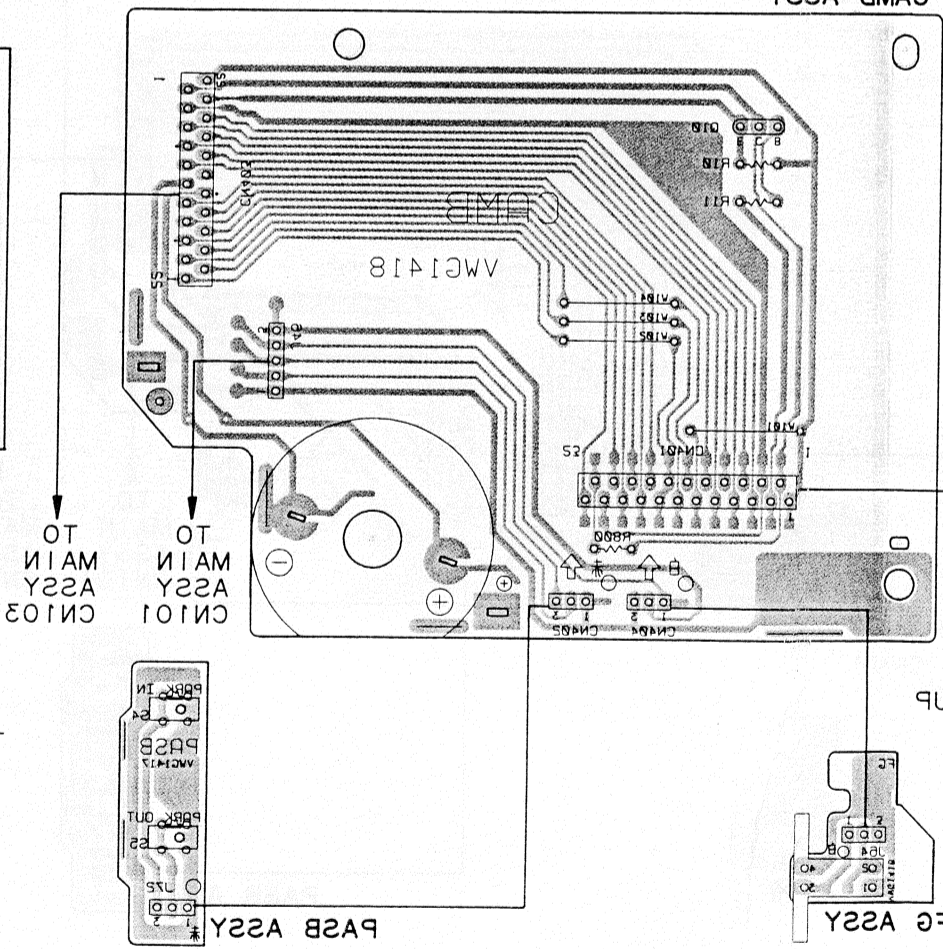
D

E

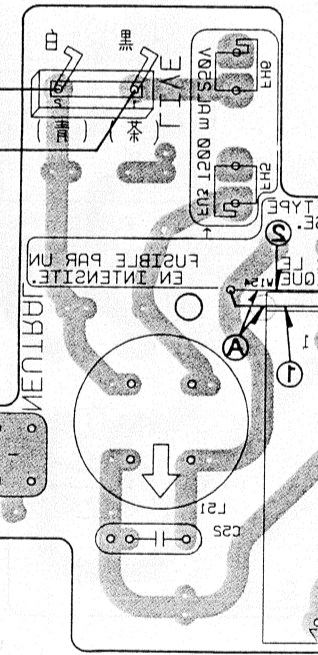
F



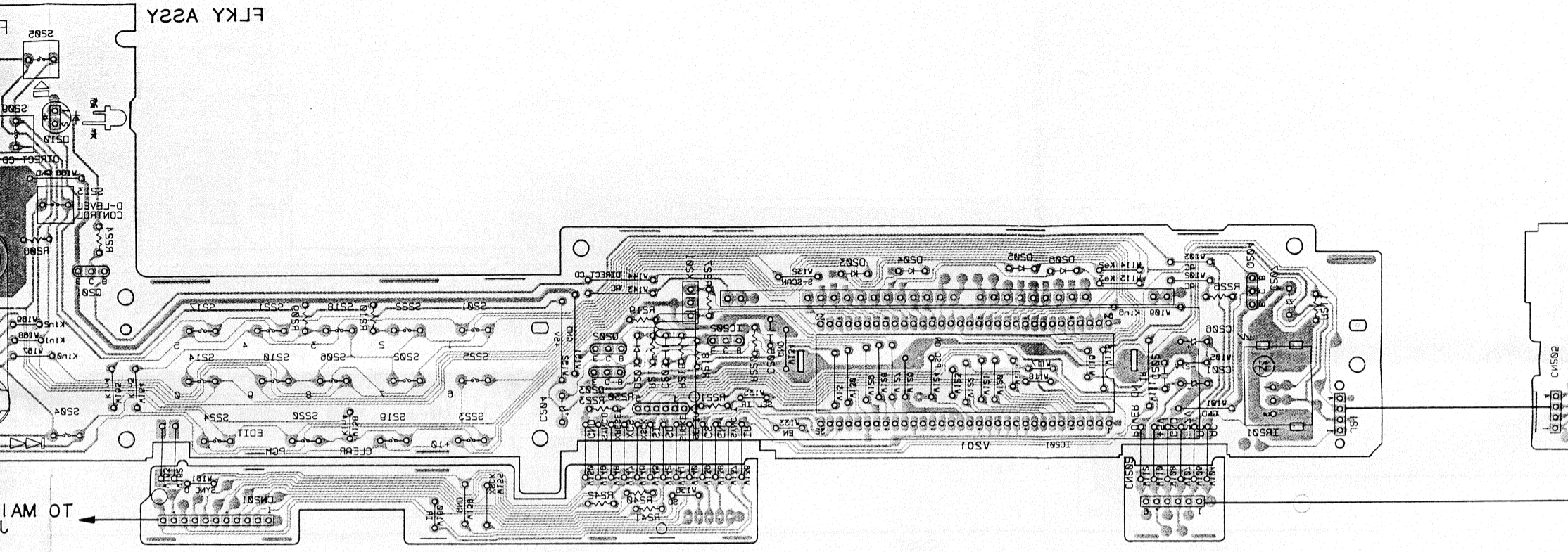
VNP1388-A



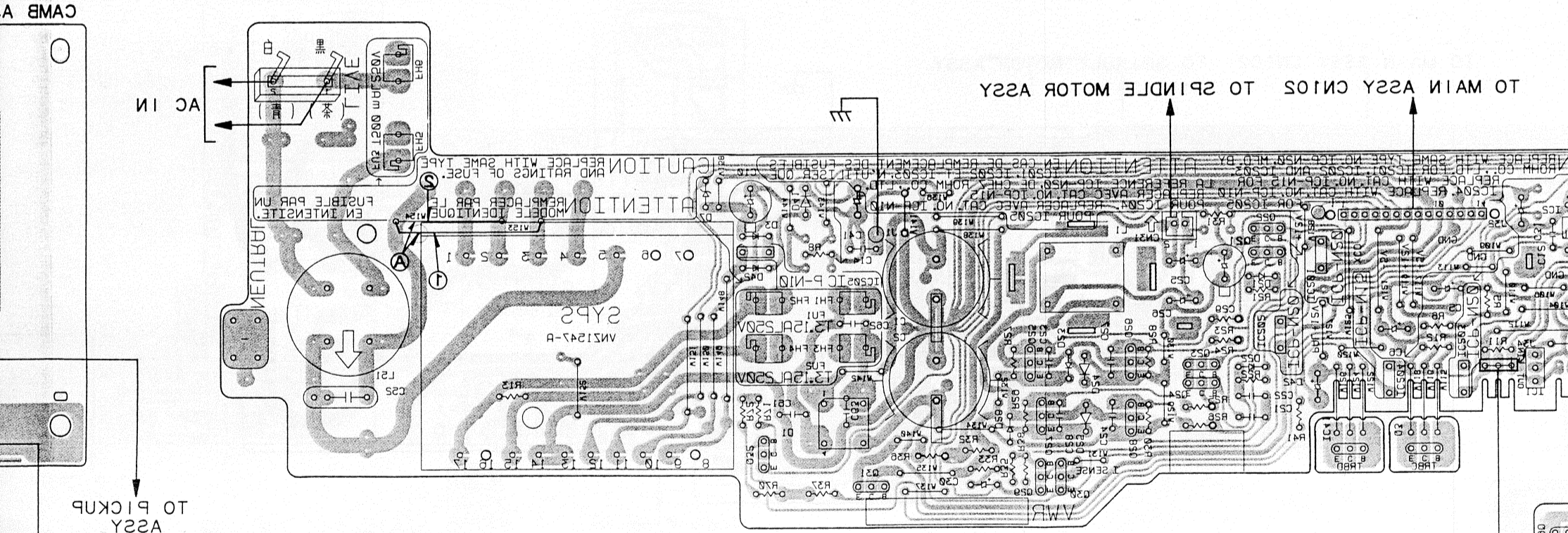
TO PICKUP ASSY



VNP1478-B



Q504 IC501 IC505 IC503 Q505 Q501



TO PICKUP ASSY

ANP1420-B

IC505 Q51 IC501 Q51 Q54 Q58 Q30 Q59 Q3 Q53 Q56 Q57 Q52 IC1 IC3 IC503 IC504 IC41 Q55

FG ASSY

CAMB A

TO MAIN

FLKY ASSY

5.3.1 OVERALL CONNECTIONS, FLKY, HEPB, PWSB, 2YPS, FG, PASB, CAMB, LOSB, LOMB AND PICKUP ASSEMBLIES

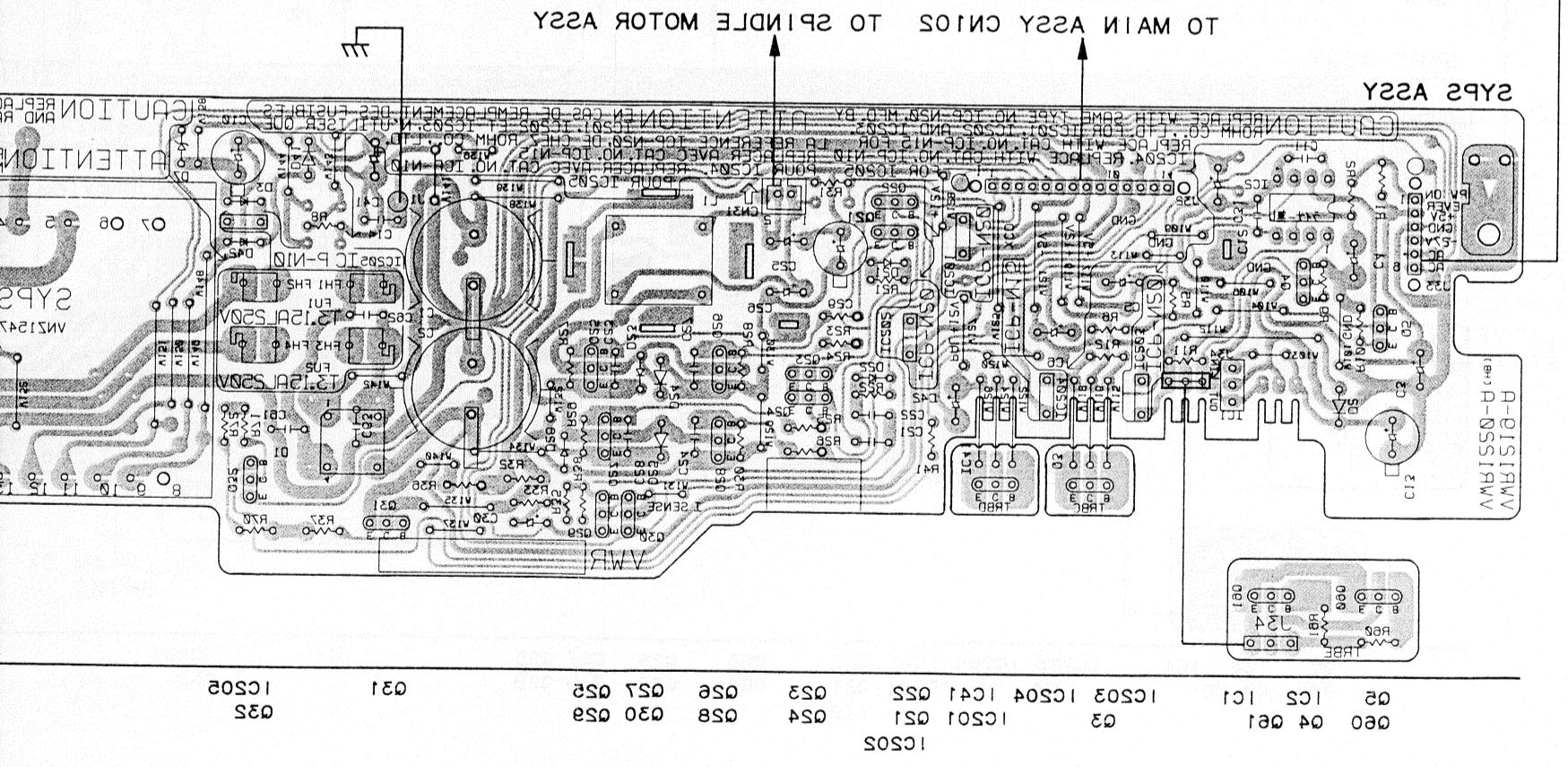
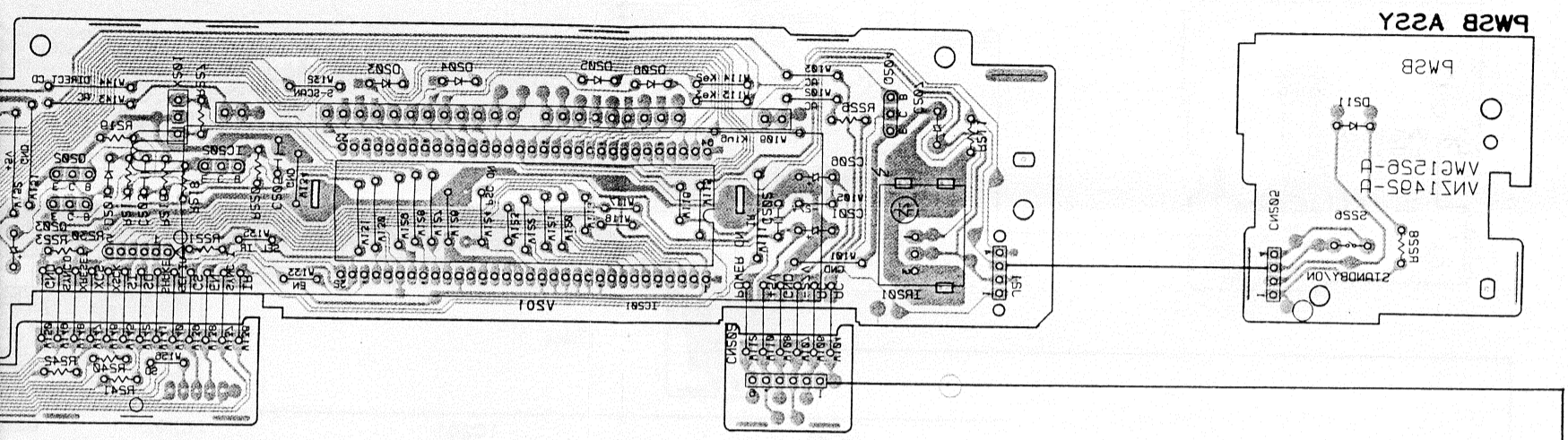
A

B

C

D

E

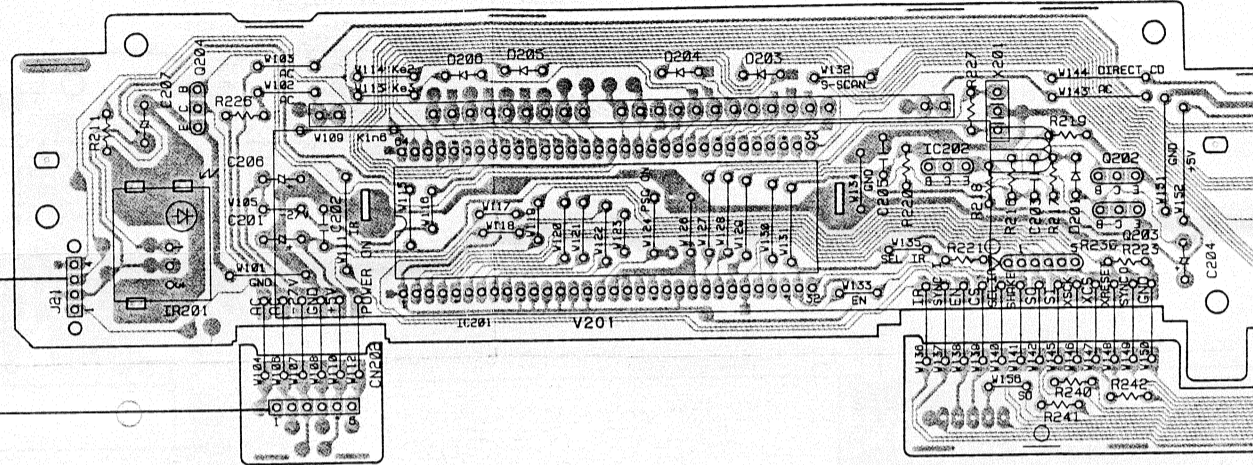
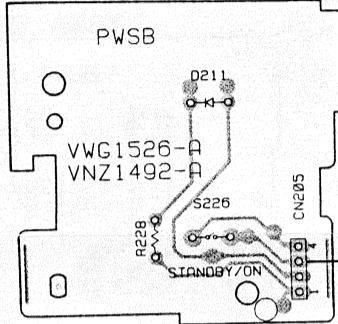


TO MAIN ASSY CN105 TO SPINDLE MOTOR ASSY

- IC505
- Q2 Q4 Q6 Q8 Q10 Q12 Q14 Q16 Q18 Q20 Q22 Q24 Q26 Q28 Q30 Q32 Q34 Q36 Q38 Q40 Q42 Q44 Q46 Q48 Q50 Q52 Q54 Q56 Q58 Q60 Q62 Q64 Q66 Q68 Q70 Q72 Q74 Q76 Q78 Q80 Q82 Q84 Q86 Q88 Q90 Q92 Q94 Q96 Q98 Q100
- Q31
- Q35
- IC502

2.2.1 OVERALL CONNECTIONS, FLKY, HEPB, PWSB, SYPS, FG, PASB, CAMB, LOSB, LOMB AND PICKUP ASSEMBLIES

PWSB ASSY



Q204

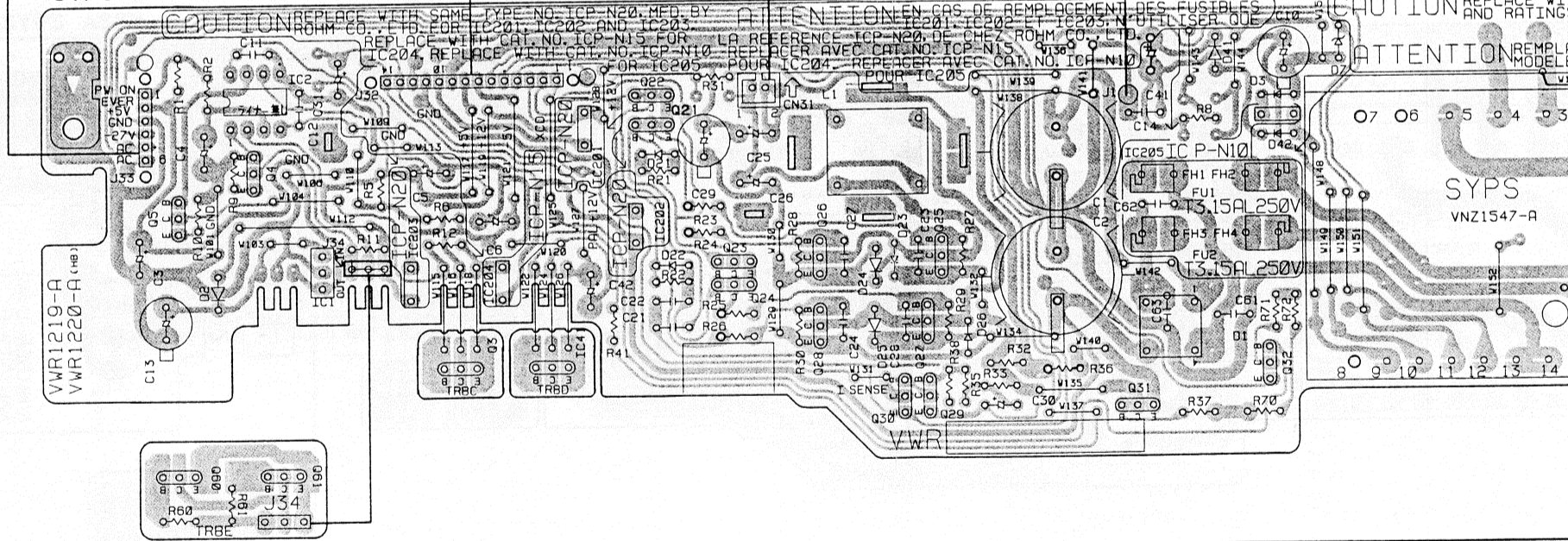
IC201

IC202

Q202
Q203

TO MAIN ASSY CN102 TO SPINDLE MOTOR ASSY

SYPS ASSY



Q5 IC2 IC1 IC203 IC204 IC41 Q22 Q23 Q26 Q27 Q25 Q31 IC205
Q60 Q4 Q61 Q3 IC201 Q21 Q24 Q28 Q30 Q29 Q32

Line Voltage Selection

Line Voltage can be changed by the following modification:

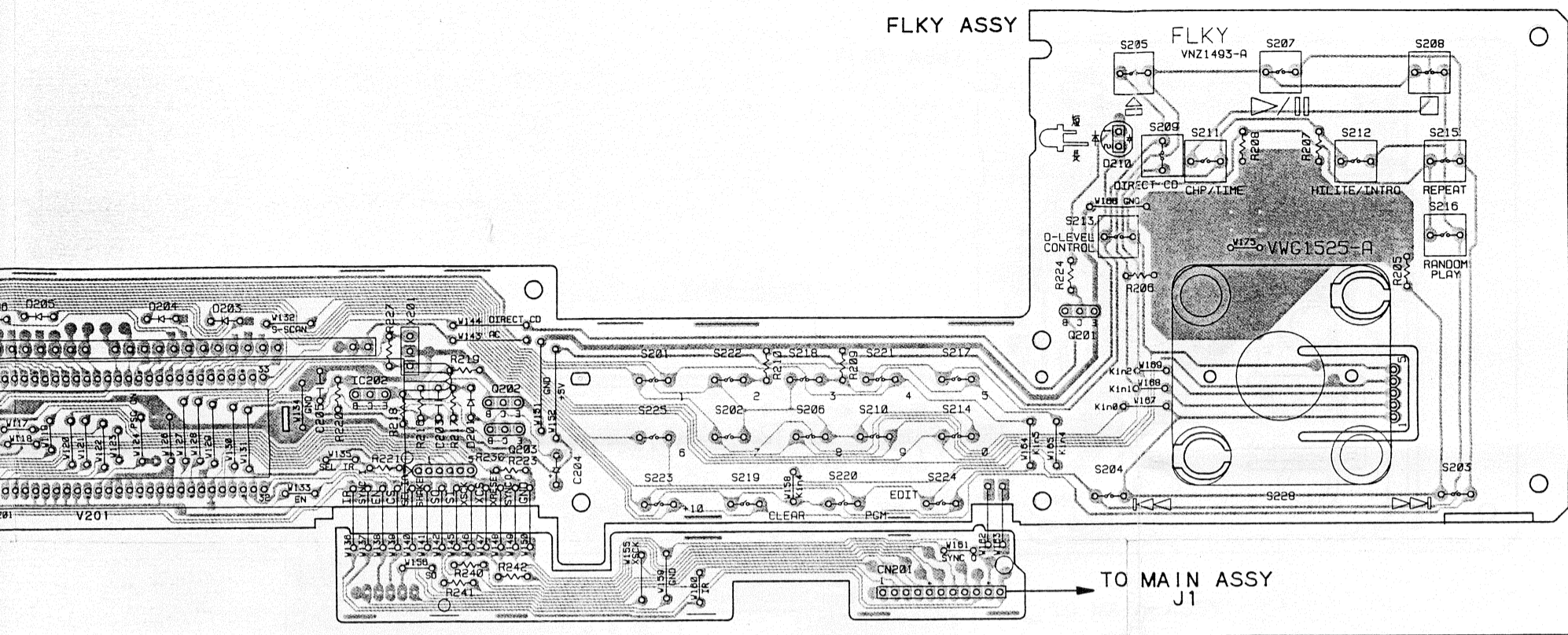
1. Disconnect the AC power cord.
2. Remove the cover.
3. Change the position of the jumper-lines (A) follows.

Voltage	jumper-line (A) position
220V-230V	①
240V	②

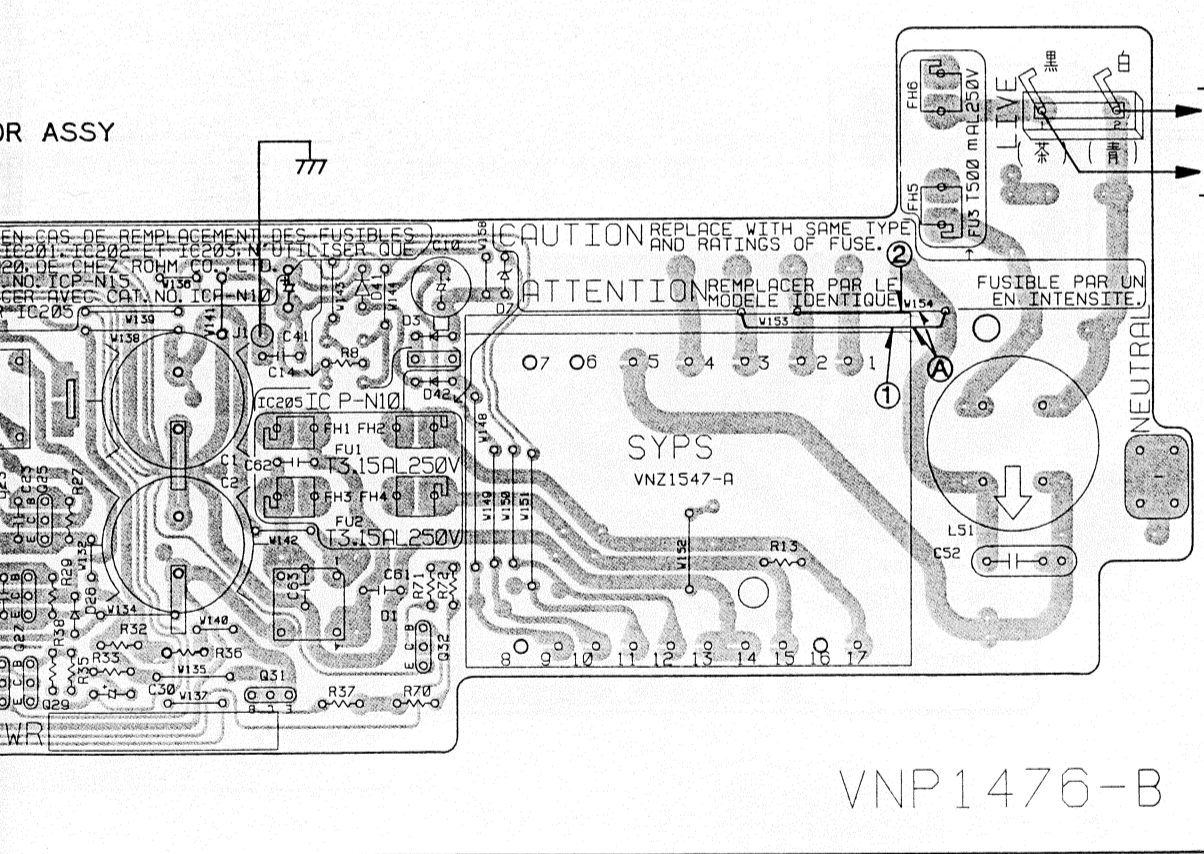
NOTE: When replacing a PCB which has the primary winding circuit of Power-transformer, be sure to compare its circuit with the diagram in Service Manual. jumper-lines on the PCB may have to be removed. Forgetting this check-up will cause a serious damage.

4. Stick a line voltage label on the rear panel.

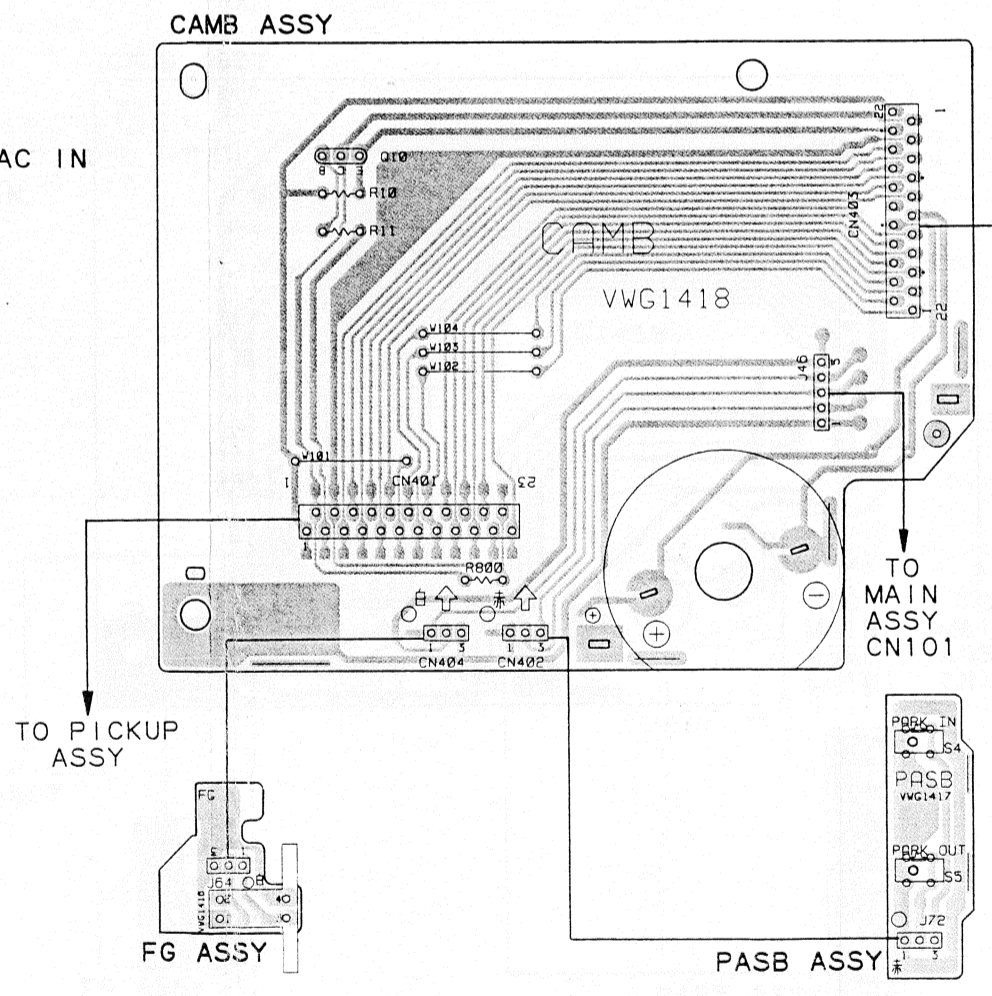
Part No.	Description
AAX-193	220V label
AAX-192	240V label



IC201 IC202 Q202 Q203 Q201



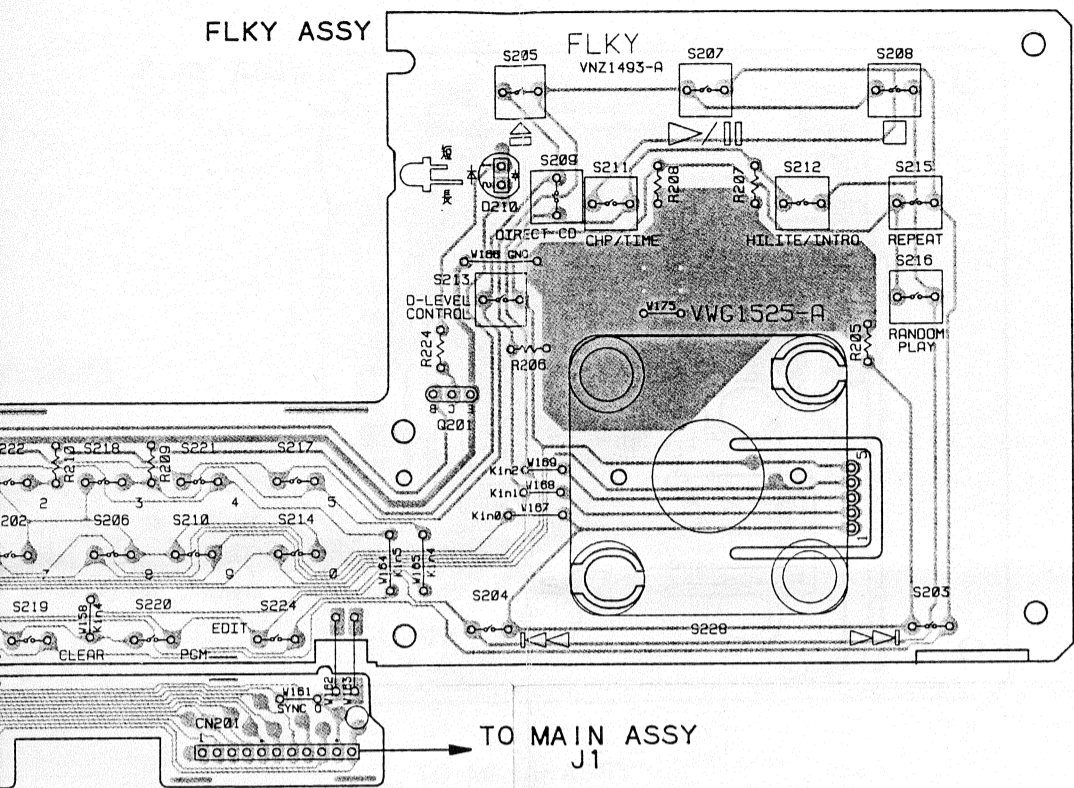
Q25 Q29 Q31 IC205 Q32



VNP1

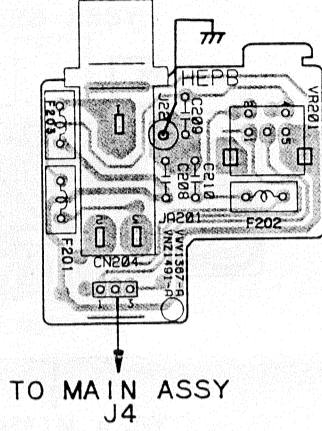
● This diagram is viewed from the mounted parts side.

A



PCB-1

HEPB ASSY

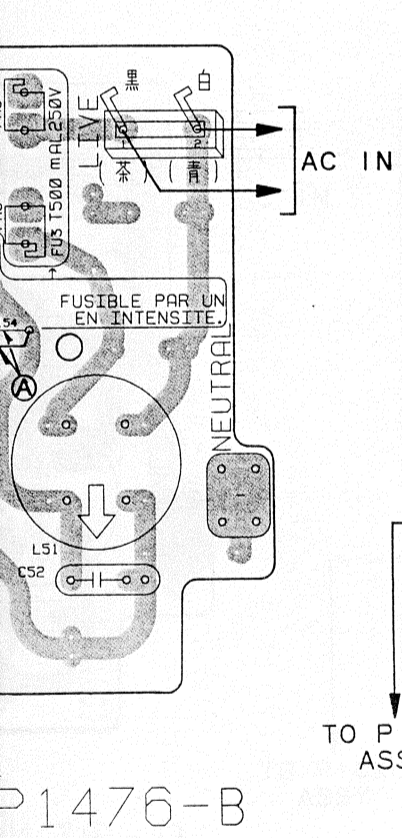


VNP1466-A

Q201

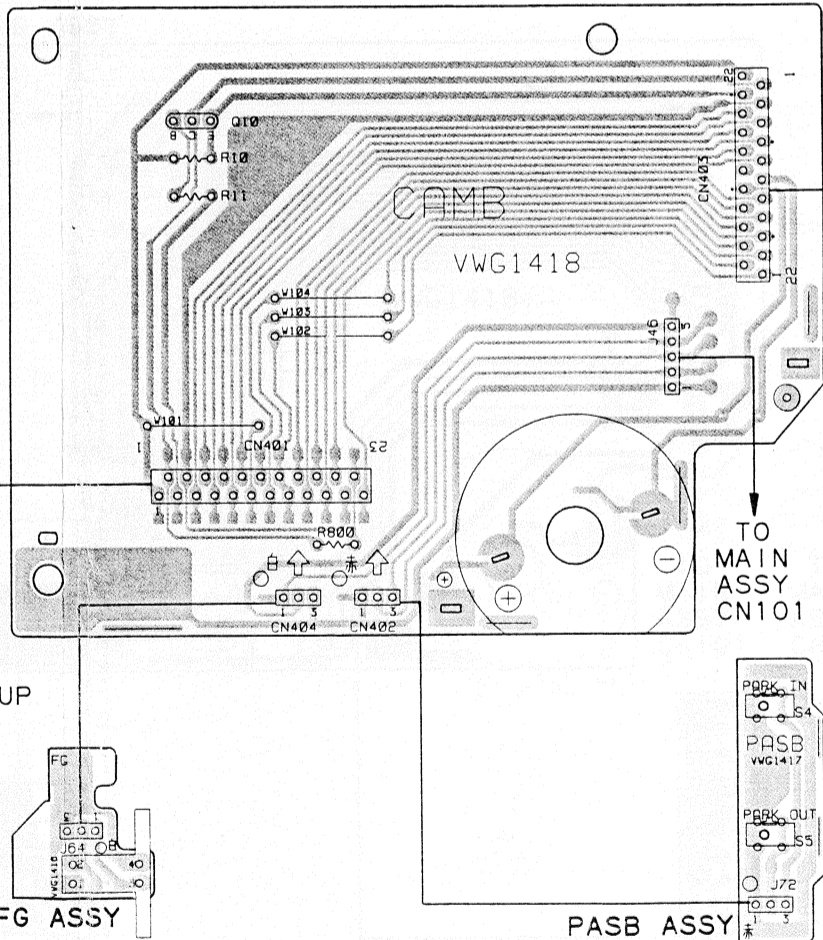
B

C

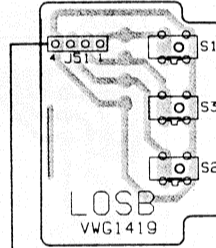


VNP1476-B

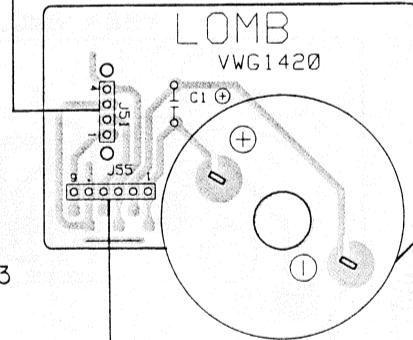
CAMB ASSY



LOSB ASSY



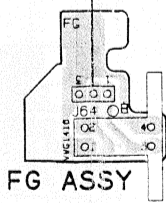
LOMB ASSY



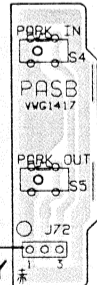
TO MAIN ASSY CN105

VNP1396-A

TO PICKUP ASSY



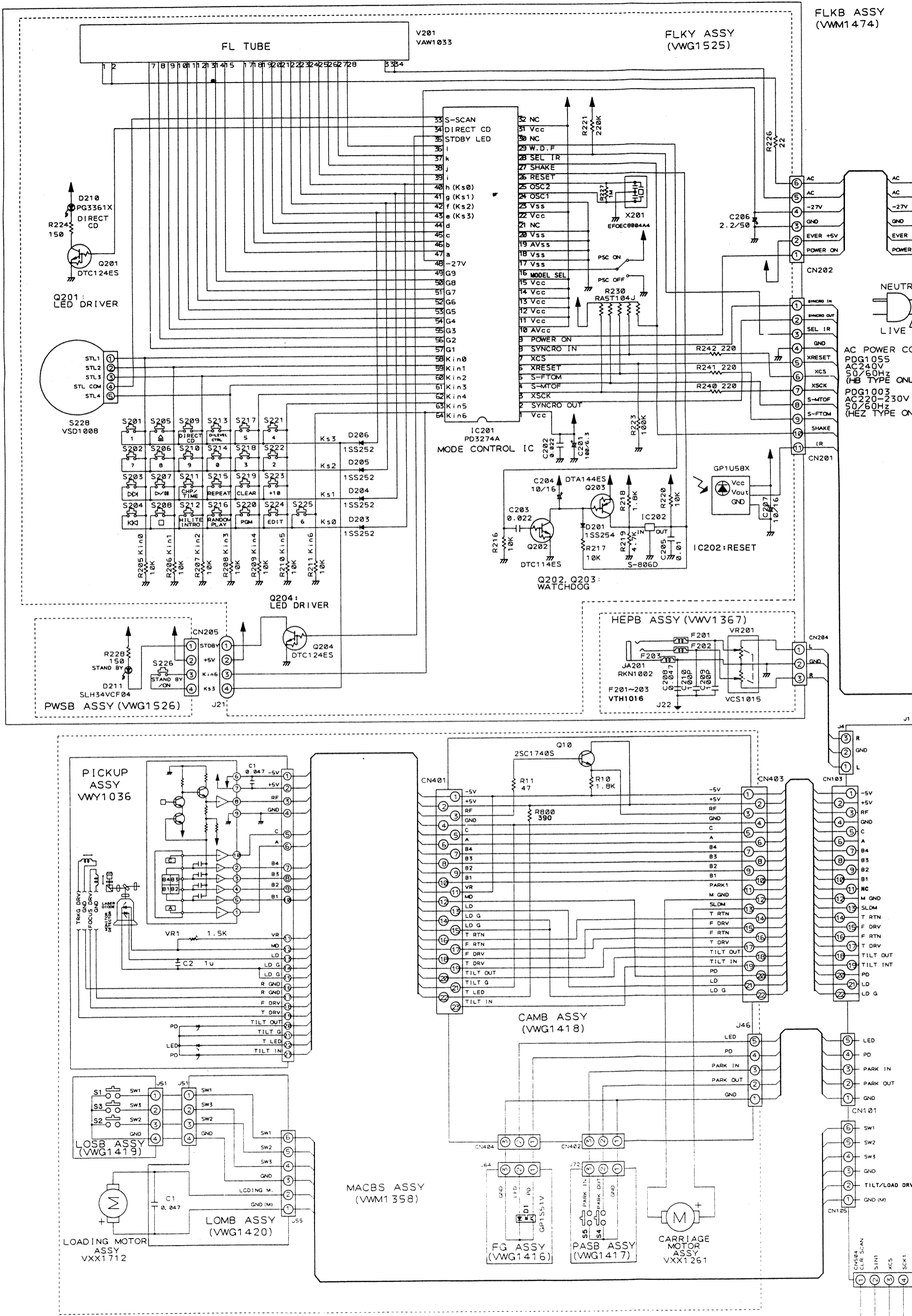
PASB ASSY



D

E

F



OVERALL CONNECTIONS,
 FLKY ASSY, HEPB ASSY
 PWSB ASSY, SYPS ASSY,
 FG ASSY, PASB ASSY,
 CAMB ASSY, LOGB ASSY,
 LOMB ASSY, PICKUP ASSY

SCH-1

FLKY ASSY (VWG1525)

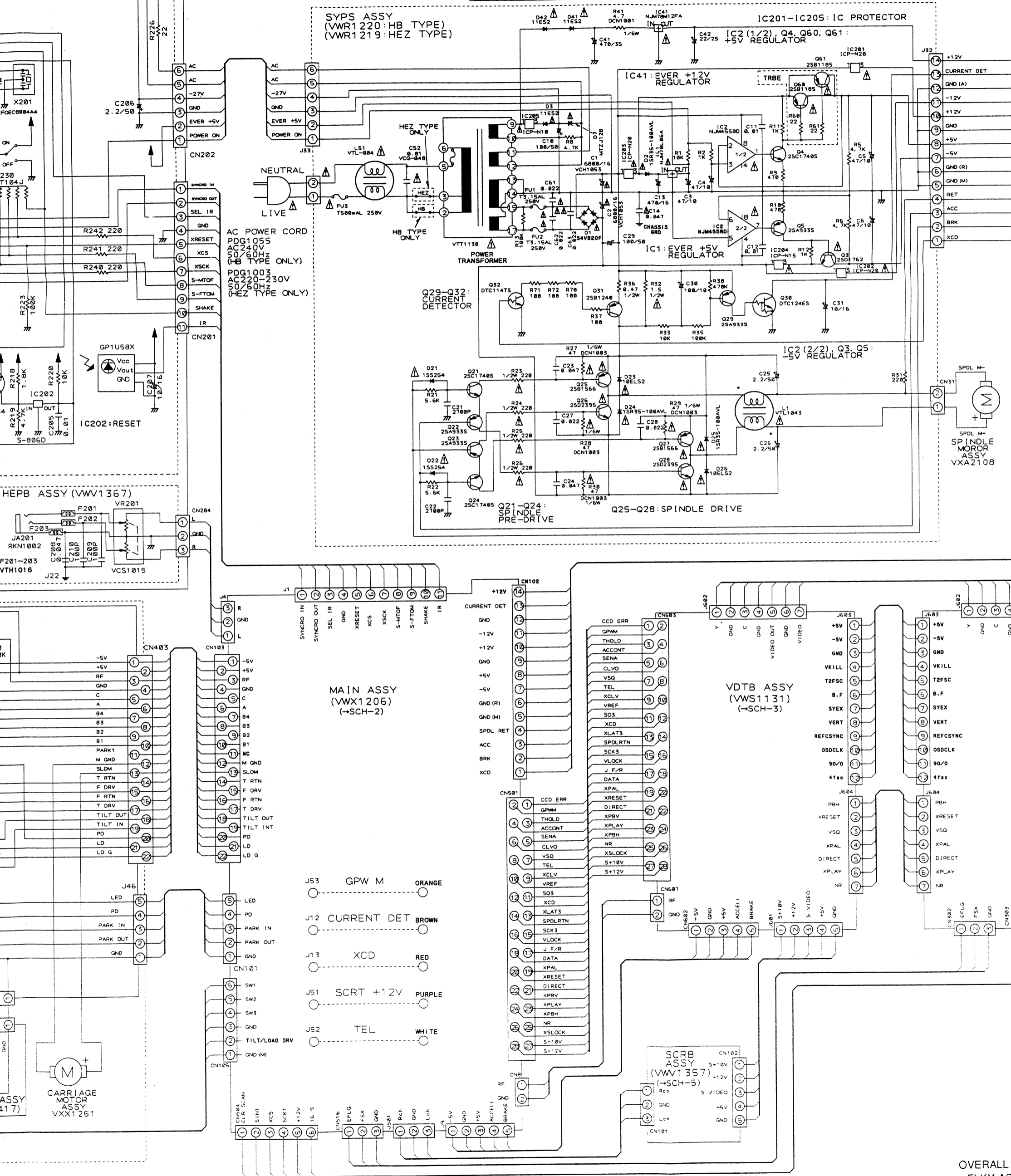
FLKB ASSY (VWM1474)

SYPS ASSY (VWR1220:HB TYPE) (VWR1219:HEZ TYPE)

CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE REPLACE WITH SAME TYPE NO. ICP-N10, MFD BY ROHM CO., LTD. FOR IC205.

CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE REPLACE WITH SAME TYPE NO. ICP-N20, MFD BY ROHM CO., LTD. FOR IC201-IC203.

CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE REPLACE WITH SAME TYPE NO. ICP-N15, MFD BY ROHM CO., LTD. FOR IC204.



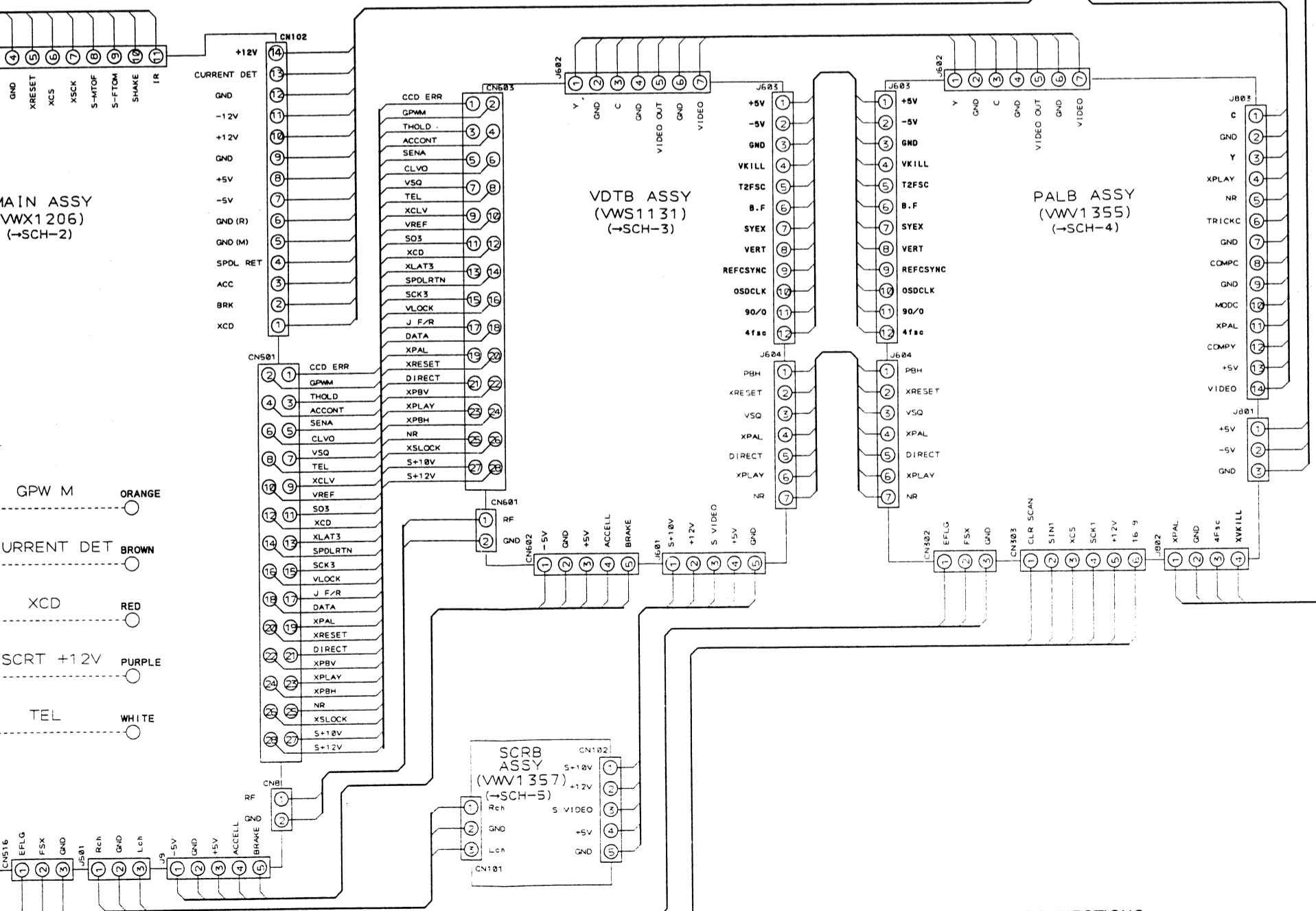
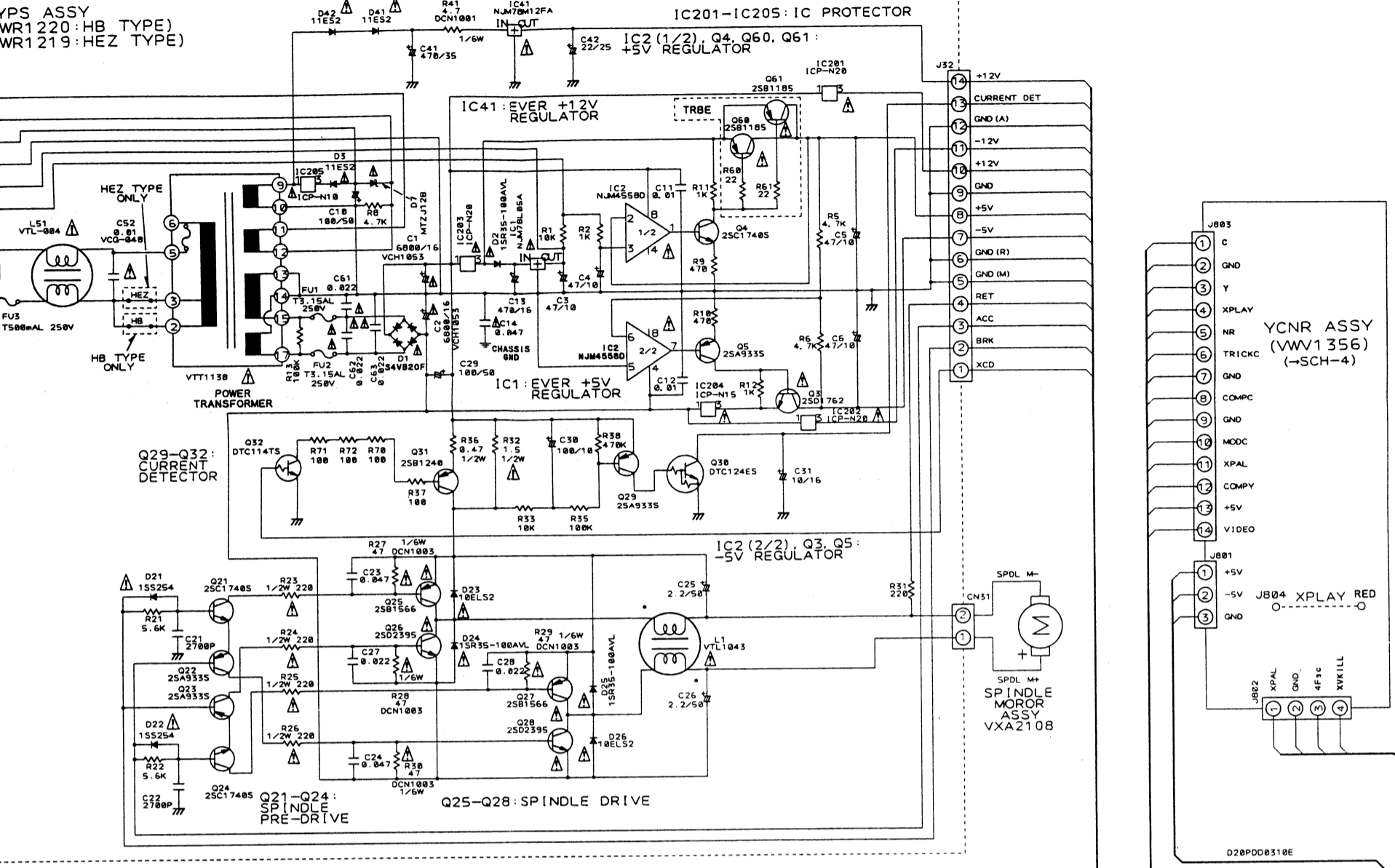
OVERALL
FLKY AS
PWSB AS
FG AS
CAMB AS
LOMB ASS

CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE WITH SAME TYPE NO. ICP-N10, MFD BY ROHM CO., LTD. FOR IC205.

CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE WITH SAME TYPE NO. ICP-N20, MFD BY ROHM CO., LTD. FOR IC201-IC203.

CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE WITH SAME TYPE NO. ICP-N15, MFD BY ROHM CO., LTD. FOR IC204.

YPS ASSY (WR1220: HB TYPE)
WR1219: HEZ TYPE)



OVERALL CONNECTIONS.
FLKY ASSY, HEPB ASSY
PWSB ASSY, SYPS ASSY,
FG ASSY, PASB ASSY,
CAMB ASSY, LOSB ASSY,
LOMB ASSY, PICKUP ASSY

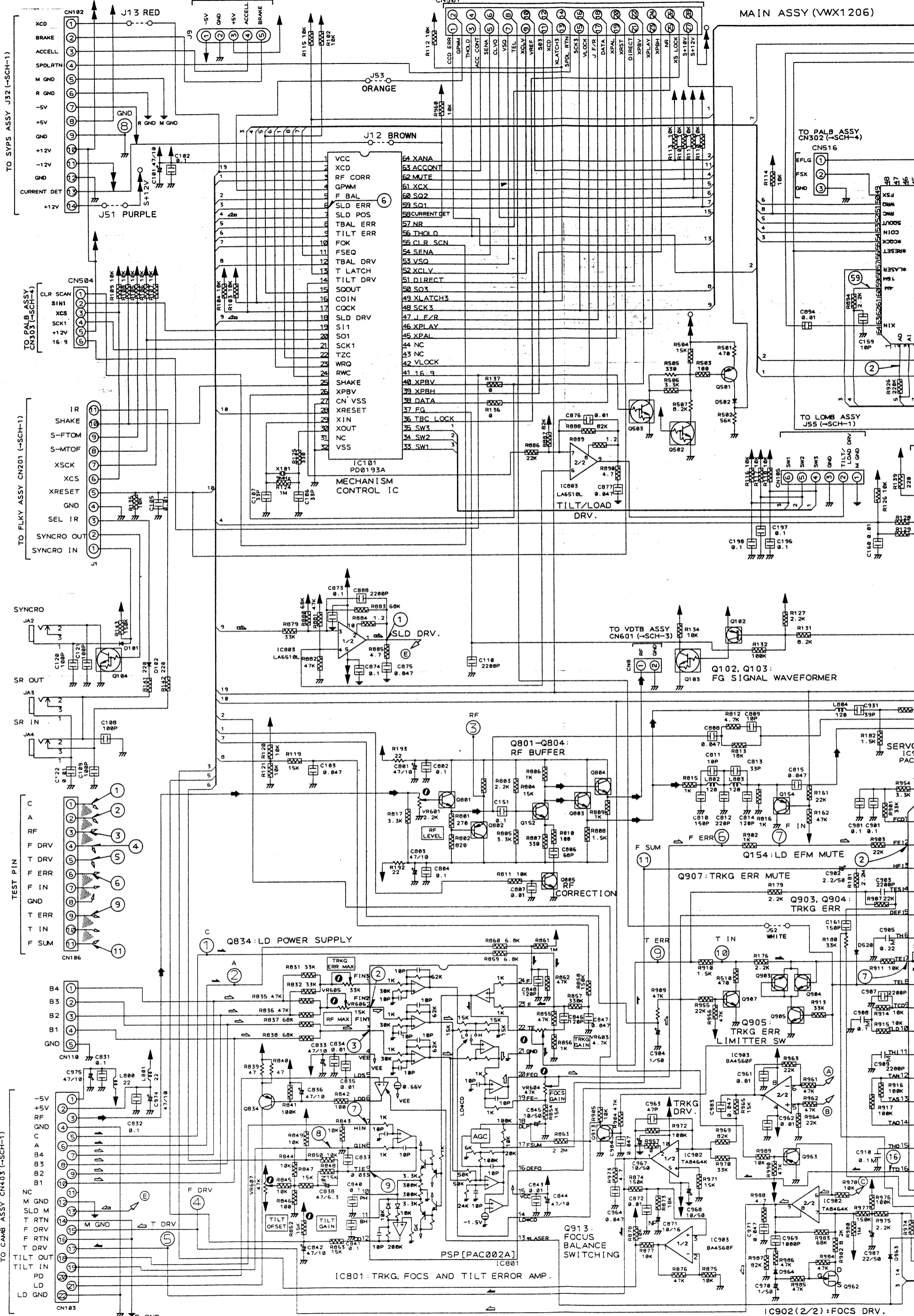
SCH-1

2.2.2 MAIN ASSEMBLY

TO VDTB ASSY CN602 (-SCH-3)

TO VDTB ASSY CN603 (-SCH-3)

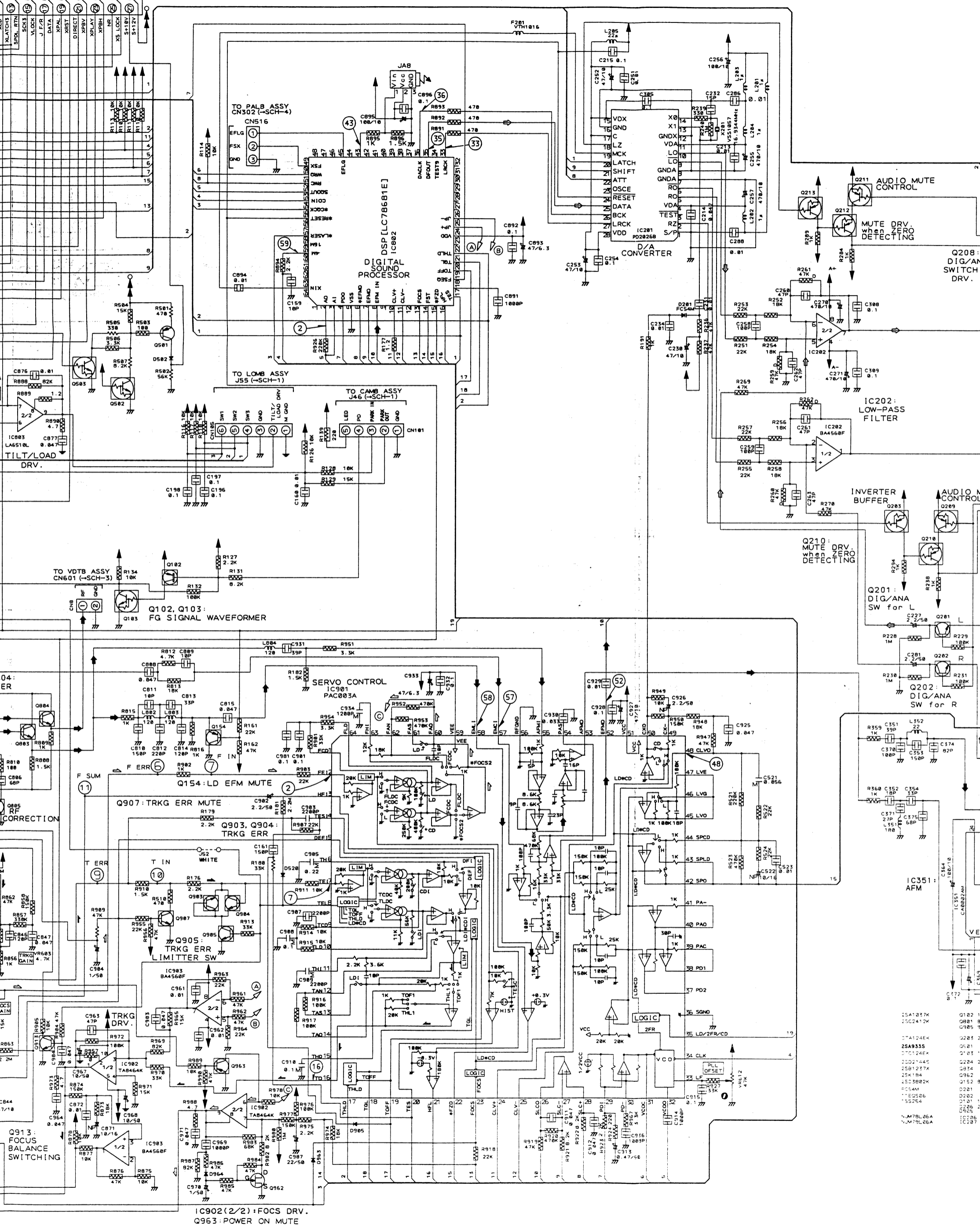
MAIN ASSY (VWX1206)



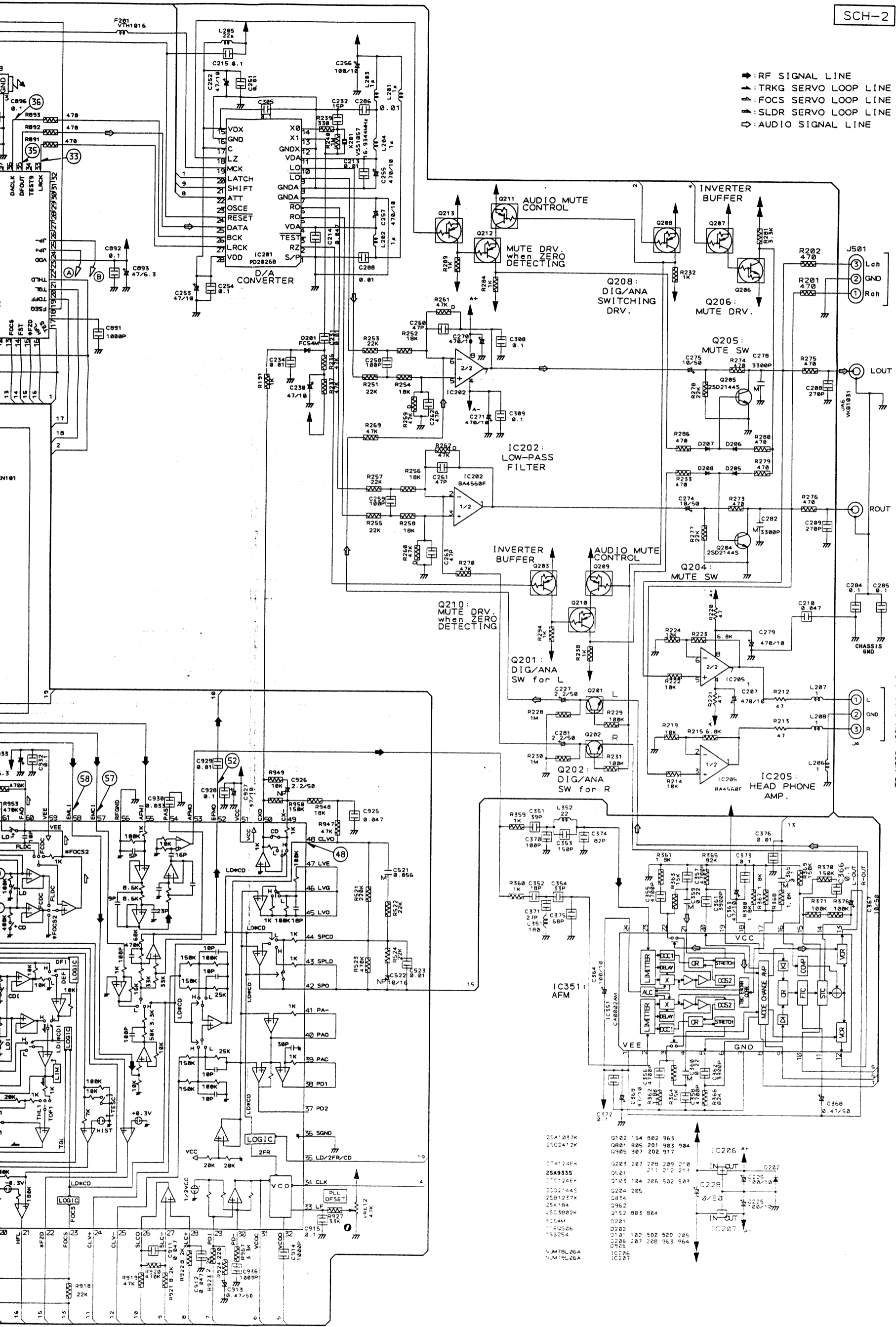
SCH-2

MAIN ASSY

MAIN ASSY (VWX1206)



- ▶: RF SIGNAL LINE
- ▶: TRKG SERVO LOOP LINE
- ▶: FOCUS SERVO LOOP LINE
- ▶: SLDR SERVO LOOP LINE
- ◁: AUDIO SIGNAL LINE



TO SCRB ASSY CN101 (-SCH-5)

TO HEPB ASSY CN204 (-SCH-1)

A
B
C
D
E
F
G

MAIN ASSY

A

B

C

D

E

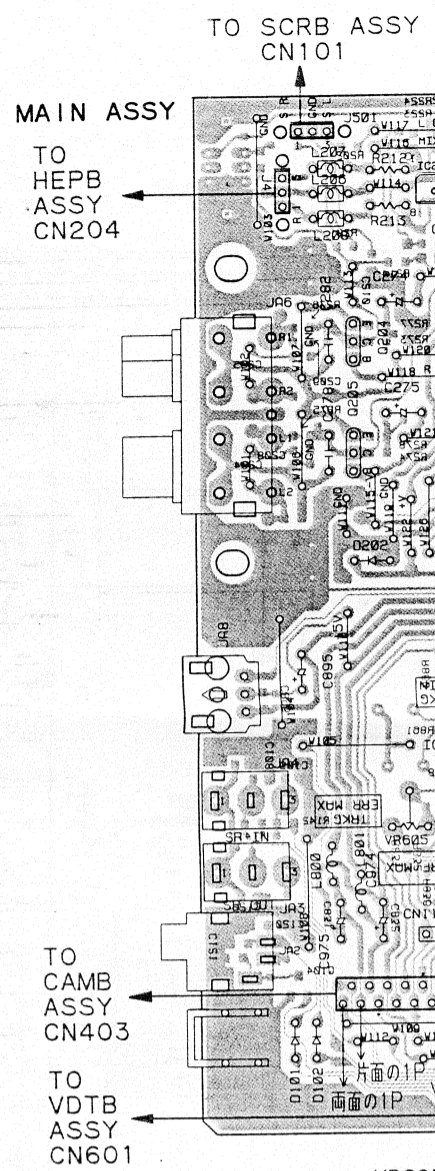
F

MAIN ASSEMBLY

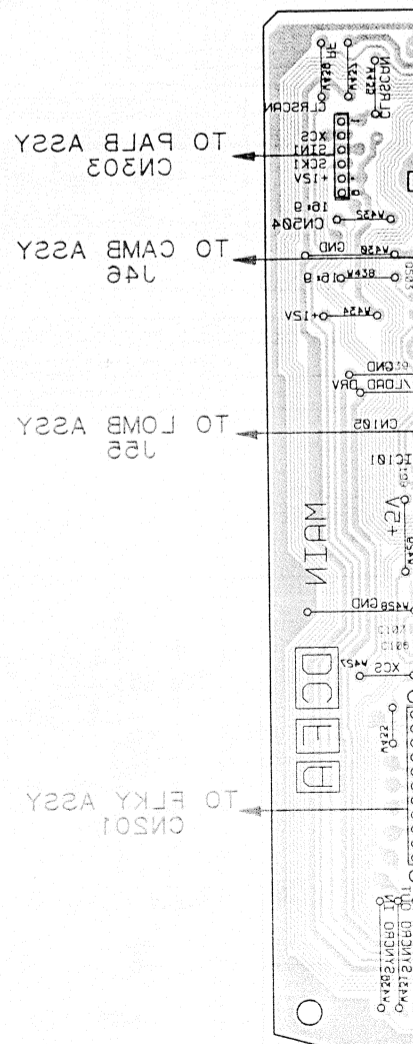
Note: (No.) in the table correspond to the pin number.

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

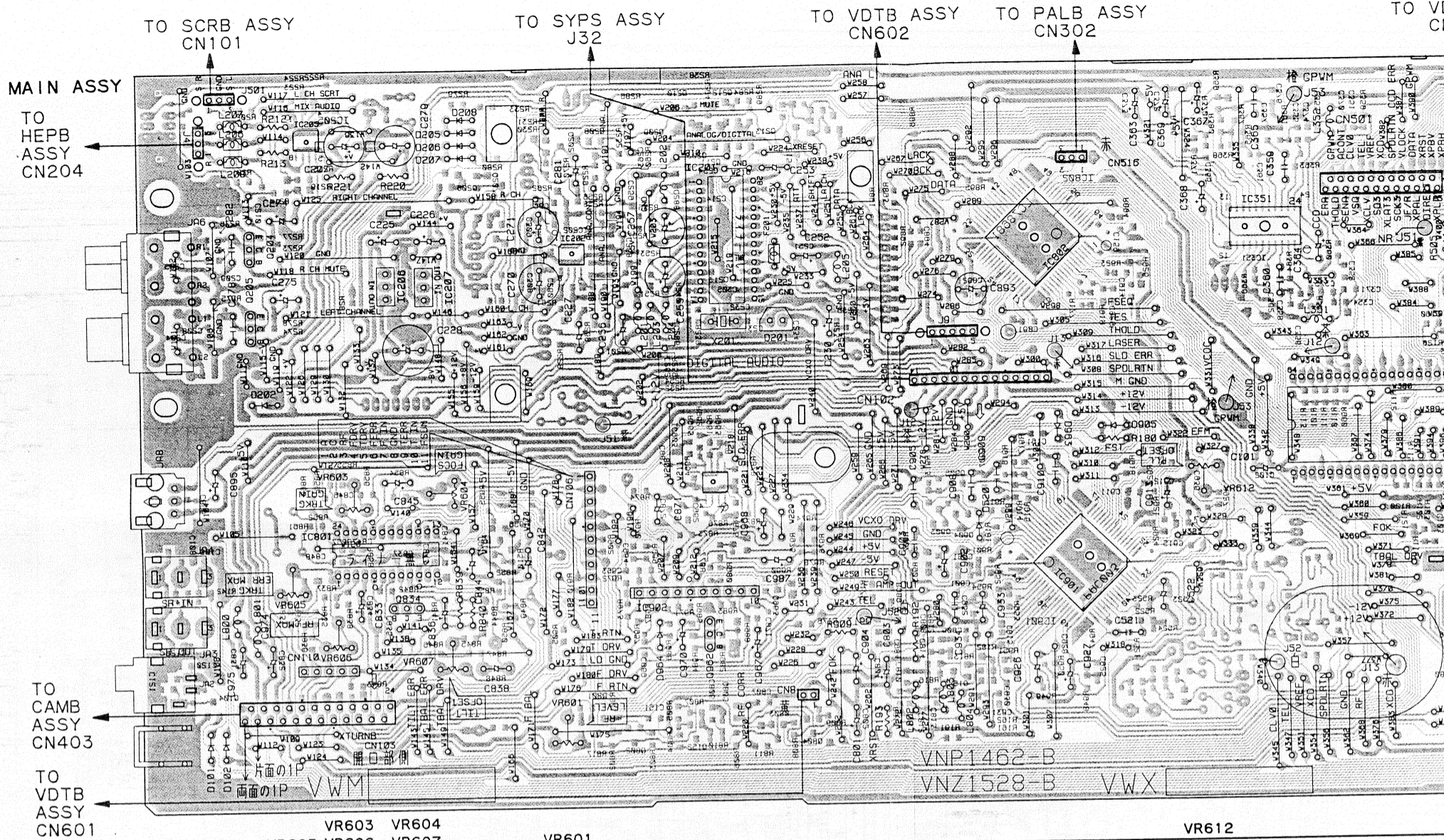
IC801(PAC002A)	IC802(LC78681E)	IC803(LA6510L)	IC901(PAC003A)	CN106	IC101 (PD0193A)
(2), (3) 1mS/Div. 16mVp-p AC mode	(2) 0.1μS/Div. 4.3Vp-p AC mode(D.audio)	(1) 2mS/Div. 1.8Vp-p DC mode	(2) 0.2mS/Div. 74mVp-p DC mode	(1), (2) 5mS/Div. 65mVp-p DC mode	(6) 1V/Div 5mS/Div approx. 1.8V DC mode (Slidr err)
(7), (8) 1mS/Div. 67mVp-p DC mode	(33) 10μS/Div. 4.2Vp-p AC mode(D.audio)		(7) 0.2mS/Div. 74mVp-p DC mode	(3) 0.5mS/Div. 300mVp-p AC mode	
(9) 5mS/Div. 0.1Vp-p DC mode	(35) 0.2μS/Div. 4.4Vp-p AC mode(D.audio)		(16) 0.2mS/Div. 0.61Vp-p DC mode	(4) 5mS/Div. 15Vp-p DC mode	
	(36) 0.2μS/Div. 4.5Vp-p AC mode(D.audio)		(48) 50μS/Div. 6.2Vp-p DC mode	(5) 5mS/Div. 5.8Vp-p DC mode	
	(43) 0.1μS/Div. 4.5Vp-p AC mode(D.audio)		(52) 0.2μS/Div. 2.1Vp-p AC mode	(6) 5mS/Div. 3.5Vp-p DC mode	
	(59) 0.1μS/Div. 2Vp-p AC mode(D.audio)		(57) 1mS/Div. 0.53Vp-p DC mode	(9) 5mS/Div. 1.25Vp-p DC mode	
			(58) 0.2mS/Div. 0.32Vp-p DC mode	(11) 10mS/Div. 1.7Vp-p DC mode	



PCB-S

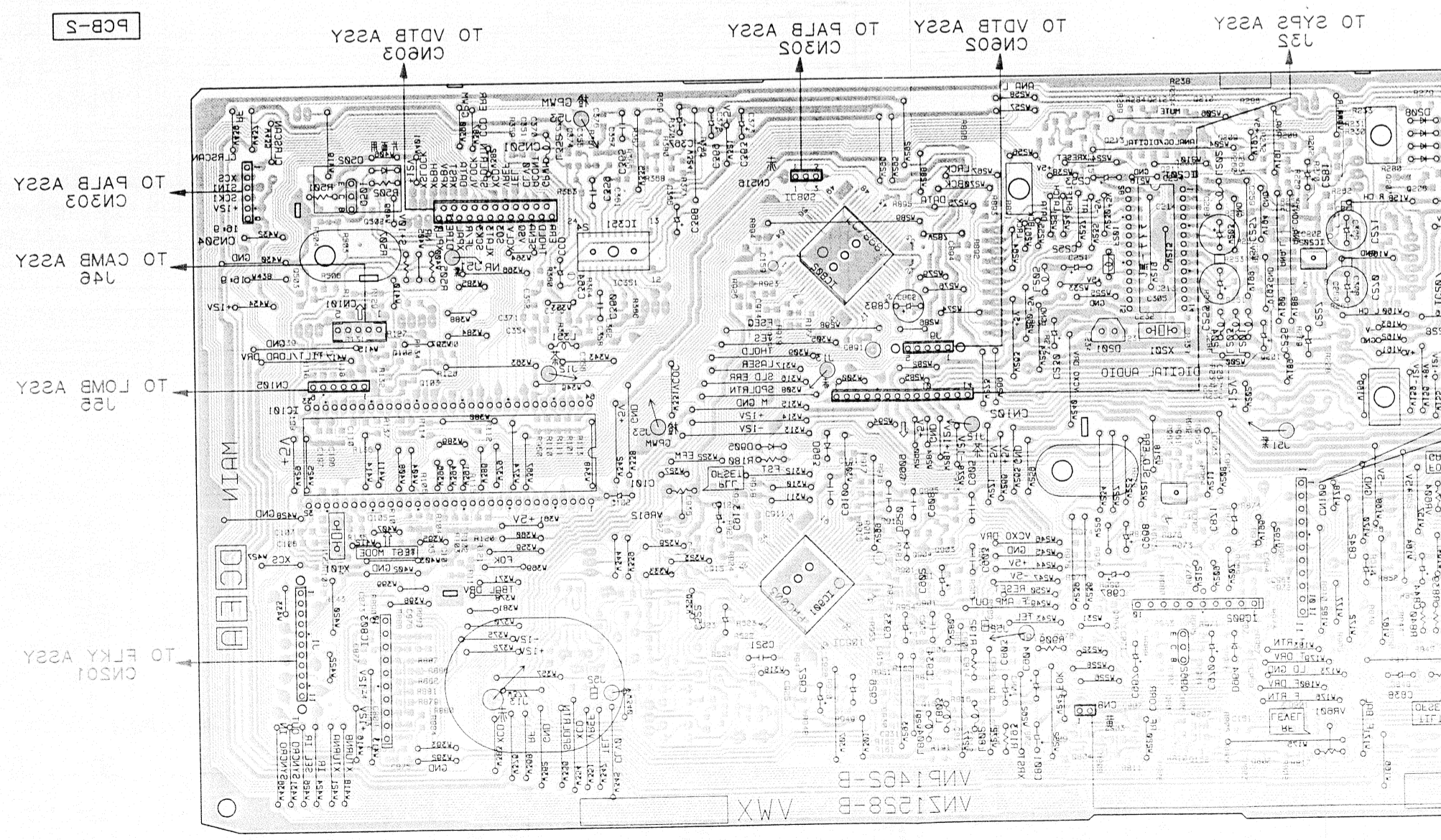


● This diagram is viewed



VR603	VR604	VR605	VR606	VR607	VR601	VR612	IC101
Q204	IC201	IC203	Q834	Q507	Q803	Q804	IC801
Q205	IC108	IC101	Q834	Q507	Q803	Q804	IC801
	IC502			Q501	Q802	Q802	
				IC501	Q802	Q802	
				IC501	Q802	Q802	

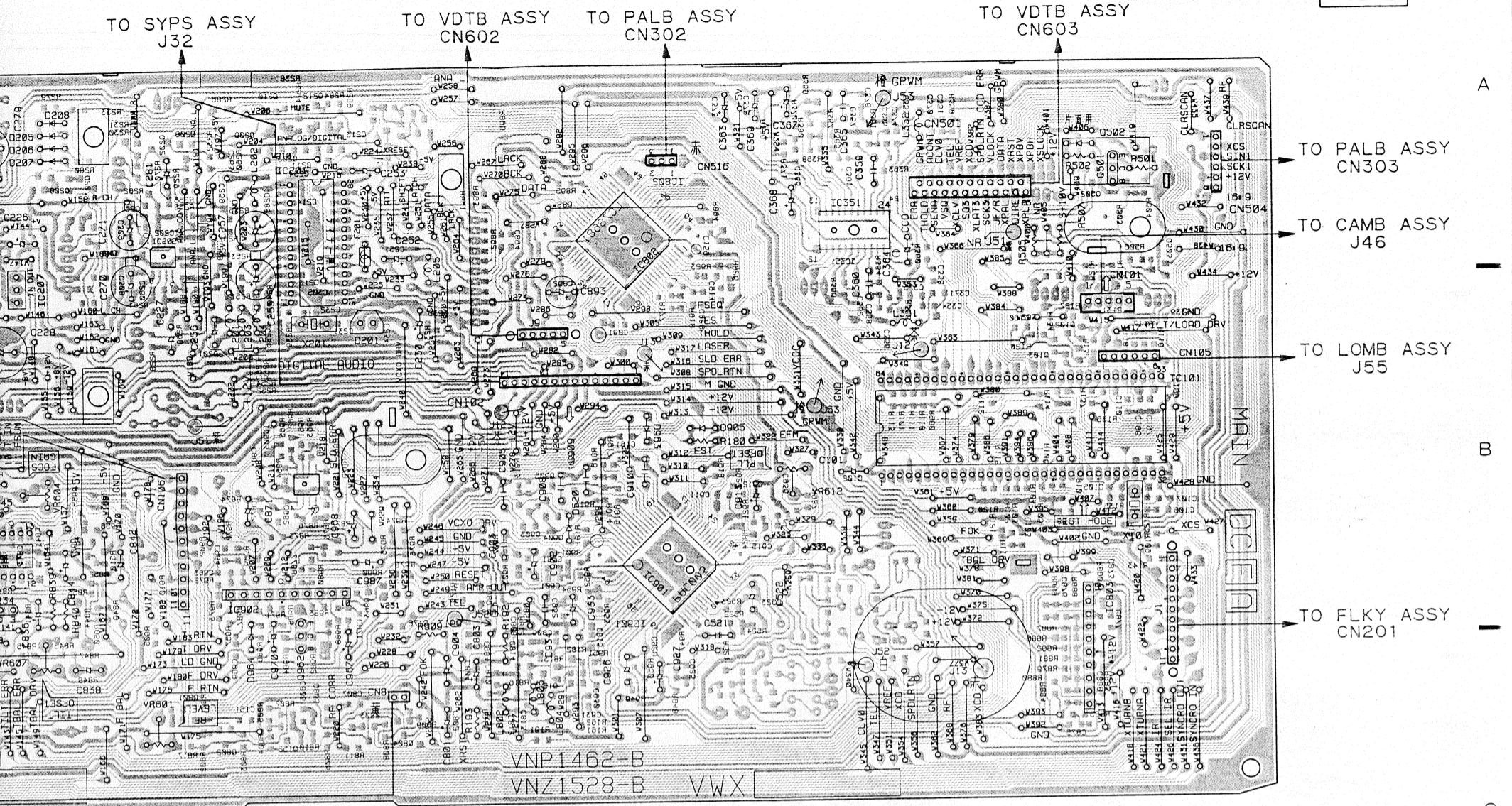
● This diagram



VR601	VR602	VR603	VR604	VR605	VR606	VR607	VR608	VR609	VR610	VR611	VR612	VR613	VR614	VR615	VR616	VR617	VR618	VR619	VR620	VR621	VR622	VR623	VR624	VR625	VR626	VR627	VR628	VR629	VR630	VR631	VR632	VR633	VR634	VR635	VR636	VR637	VR638	VR639	VR640	VR641	VR642	VR643	VR644	VR645	VR646	VR647	VR648	VR649	VR650	VR651	VR652	VR653	VR654	VR655	VR656	VR657	VR658	VR659	VR660	VR661	VR662	VR663	VR664	VR665	VR666	VR667	VR668	VR669	VR670	VR671	VR672	VR673	VR674	VR675	VR676	VR677	VR678	VR679	VR680	VR681	VR682	VR683	VR684	VR685	VR686	VR687	VR688	VR689	VR690	VR691	VR692	VR693	VR694	VR695	VR696	VR697	VR698	VR699	VR700	VR701	VR702	VR703	VR704	VR705	VR706	VR707	VR708	VR709	VR710	VR711	VR712	VR713	VR714	VR715	VR716	VR717	VR718	VR719	VR720	VR721	VR722	VR723	VR724	VR725	VR726	VR727	VR728	VR729	VR730	VR731	VR732	VR733	VR734	VR735	VR736	VR737	VR738	VR739	VR740	VR741	VR742	VR743	VR744	VR745	VR746	VR747	VR748	VR749	VR750	VR751	VR752	VR753	VR754	VR755	VR756	VR757	VR758	VR759	VR760	VR761	VR762	VR763	VR764	VR765	VR766	VR767	VR768	VR769	VR770	VR771	VR772	VR773	VR774	VR775	VR776	VR777	VR778	VR779	VR780	VR781	VR782	VR783	VR784	VR785	VR786	VR787	VR788	VR789	VR790	VR791	VR792	VR793	VR794	VR795	VR796	VR797	VR798	VR799	VR800
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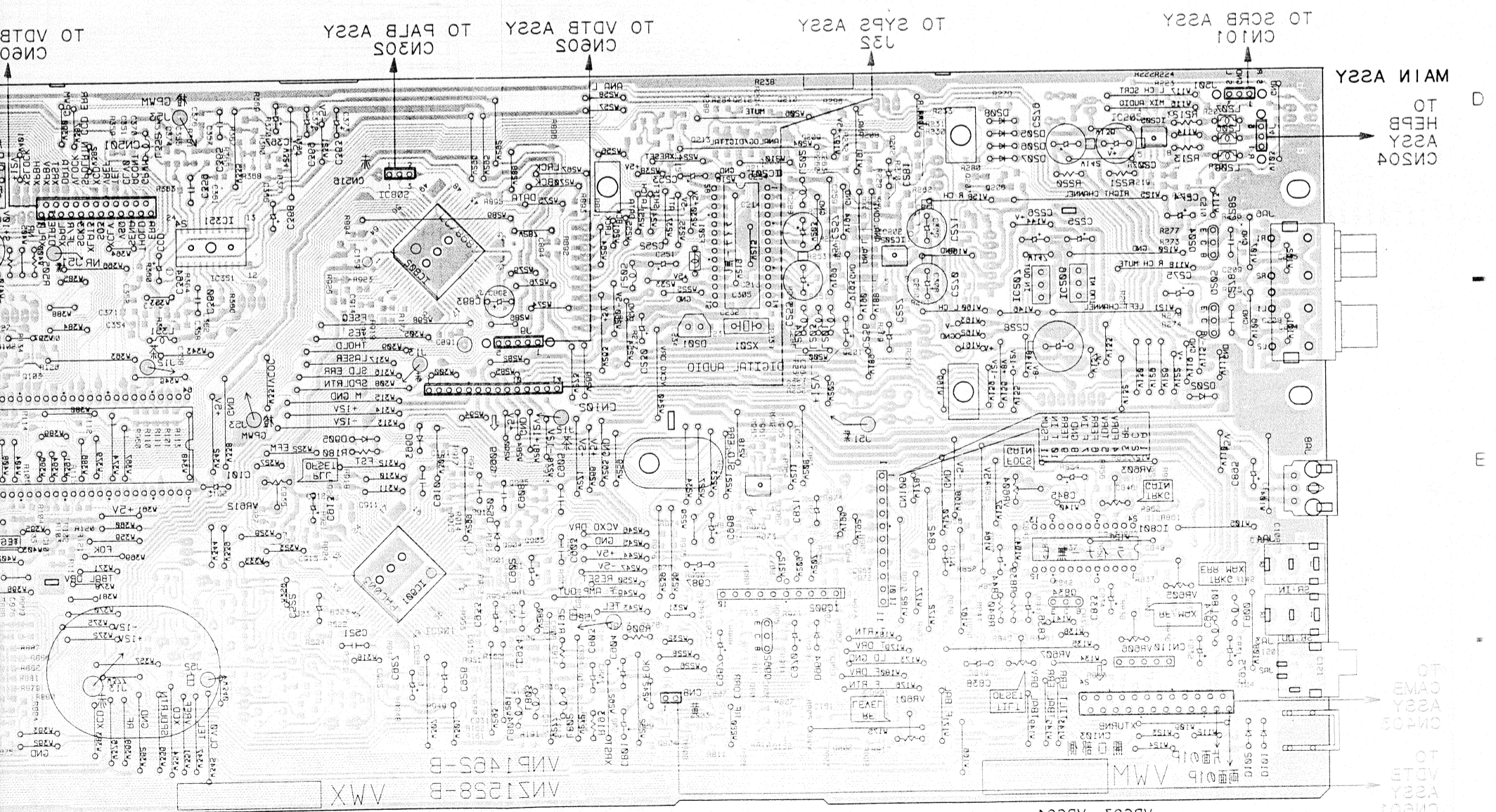
● This diagram is viewed from the mounted parts side.

PCB-2



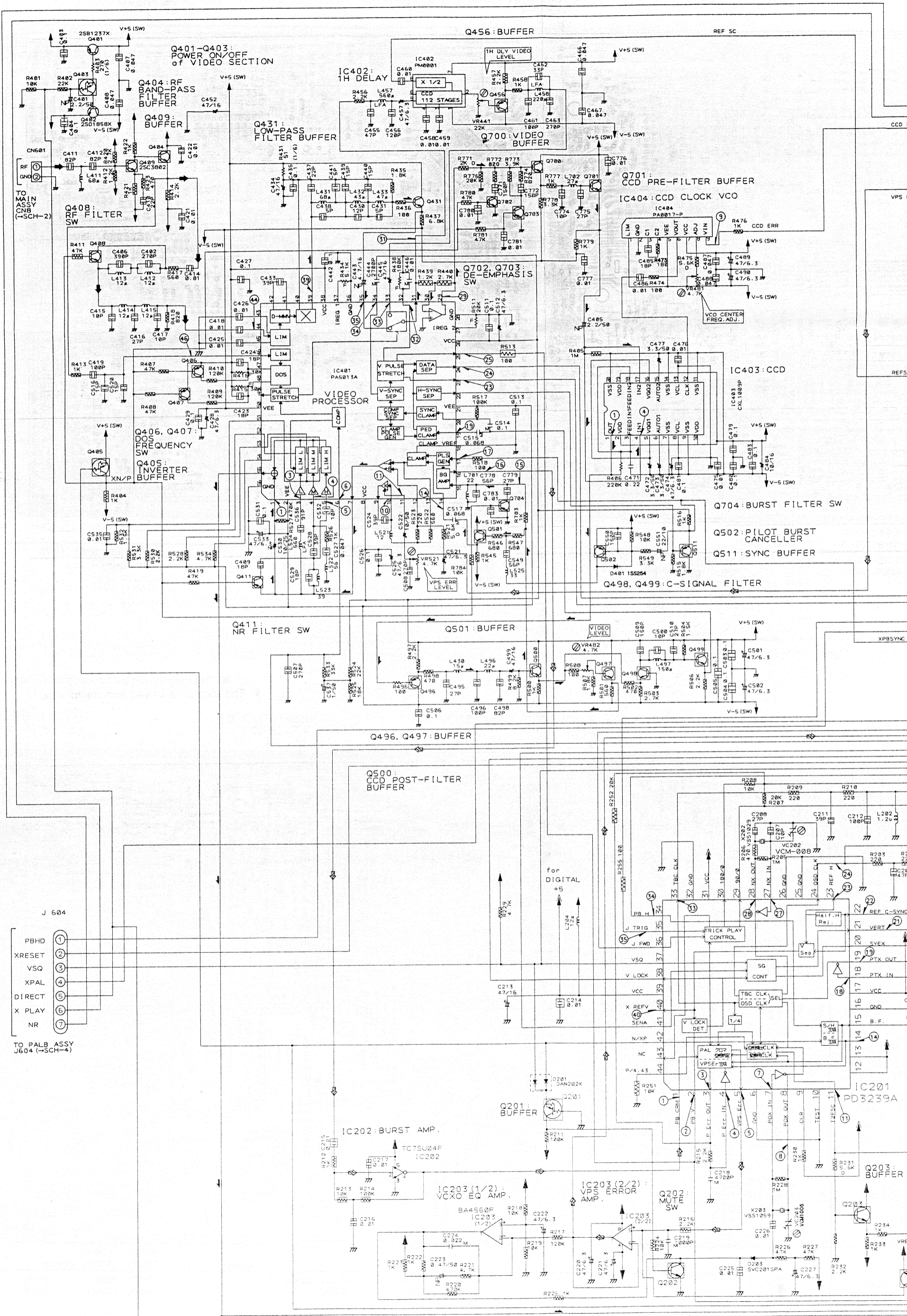
VR604	VR601	VR612	IC101	IC803	Q503	Q505	Q507	Q509	Q511	Q513	Q515	Q517	Q519	Q521	Q523	Q525	Q527	Q529	Q531	Q533	Q535	Q537	Q539	Q541	Q543	Q545	Q547	Q549	Q551	Q553	Q555	Q557	Q559	Q561	Q563	Q565	Q567	Q569	Q571	Q573	Q575	Q577	Q579	Q581	Q583	Q585	Q587	Q589	Q591	Q593	Q595	Q597	Q599	Q601	Q603	Q605	Q607	Q609	Q611	Q613	Q615	Q617	Q619	Q621	Q623	Q625	Q627	Q629	Q631	Q633	Q635	Q637	Q639	Q641	Q643	Q645	Q647	Q649	Q651	Q653	Q655	Q657	Q659	Q661	Q663	Q665	Q667	Q669	Q671	Q673	Q675	Q677	Q679	Q681	Q683	Q685	Q687	Q689	Q691	Q693	Q695	Q697	Q699	Q701	Q703	Q705	Q707	Q709	Q711	Q713	Q715	Q717	Q719	Q721	Q723	Q725	Q727	Q729	Q731	Q733	Q735	Q737	Q739	Q741	Q743	Q745	Q747	Q749	Q751	Q753	Q755	Q757	Q759	Q761	Q763	Q765	Q767	Q769	Q771	Q773	Q775	Q777	Q779	Q781	Q783	Q785	Q787	Q789	Q791	Q793	Q795	Q797	Q799	Q801	Q803	Q805	Q807	Q809	Q811	Q813	Q815	Q817	Q819	Q821	Q823	Q825	Q827	Q829	Q831	Q833	Q835	Q837	Q839	Q841	Q843	Q845	Q847	Q849	Q851	Q853	Q855	Q857	Q859	Q861	Q863	Q865	Q867	Q869	Q871	Q873	Q875	Q877	Q879	Q881	Q883	Q885	Q887	Q889	Q891	Q893	Q895	Q897	Q899	Q901	Q903	Q905	Q907	Q909	Q911	Q913	Q915	Q917	Q919	Q921	Q923	Q925	Q927	Q929	Q931	Q933	Q935	Q937	Q939	Q941	Q943	Q945	Q947	Q949	Q951	Q953	Q955	Q957	Q959	Q961	Q963	Q965	Q967	Q969	Q971	Q973	Q975	Q977	Q979	Q981	Q983	Q985	Q987	Q989	Q991	Q993	Q995	Q997	Q999
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● This diagram is viewed from the foil side.



VR604	VR601	VR612	IC101	IC803	Q503	Q505	Q507	Q509	Q511	Q513	Q515	Q517	Q519	Q521	Q523	Q525	Q527	Q529	Q531	Q533	Q535	Q537	Q539	Q541	Q543	Q545	Q547	Q549	Q551	Q553	Q555	Q557	Q559	Q561	Q563	Q565	Q567	Q569	Q571	Q573	Q575	Q577	Q579	Q581	Q583	Q585	Q587	Q589	Q591	Q593	Q595	Q597	Q599	Q601	Q603	Q605	Q607	Q609	Q611	Q613	Q615	Q617	Q619	Q621	Q623	Q625	Q627	Q629	Q631	Q633	Q635	Q637	Q639	Q641	Q643	Q645	Q647	Q649	Q651	Q653	Q655	Q657	Q659	Q661	Q663	Q665	Q667	Q669	Q671	Q673	Q675	Q677	Q679	Q681	Q683	Q685	Q687	Q689	Q691	Q693	Q695	Q697	Q699	Q701	Q703	Q705	Q707	Q709	Q711	Q713	Q715	Q717	Q719	Q721	Q723	Q725	Q727	Q729	Q731	Q733	Q735	Q737	Q739	Q741	Q743	Q745	Q747	Q749	Q751	Q753	Q755	Q757	Q759	Q761	Q763	Q765	Q767	Q769	Q771	Q773	Q775	Q777	Q779	Q781	Q783	Q785	Q787	Q789	Q791	Q793	Q795	Q797	Q799	Q801	Q803	Q805	Q807	Q809	Q811	Q813	Q815	Q817	Q819	Q821	Q823	Q825	Q827	Q829	Q831	Q833	Q835	Q837	Q839	Q841	Q843	Q845	Q847	Q849	Q851	Q853	Q855	Q857	Q859	Q861	Q863	Q865	Q867	Q869	Q871	Q873	Q875	Q877	Q879	Q881	Q883	Q885	Q887	Q889	Q891	Q893	Q895	Q897	Q899	Q901	Q903	Q905	Q907	Q909	Q911	Q913	Q915	Q917	Q919	Q921	Q923	Q925	Q927	Q929	Q931	Q933	Q935	Q937	Q939	Q941	Q943	Q945	Q947	Q949	Q951	Q953	Q955	Q957	Q959	Q961	Q963	Q965	Q967	Q969	Q971	Q973	Q975	Q977	Q979	Q981	Q983	Q985	Q987	Q989	Q991	Q993	Q995	Q997	Q999
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2.2.3 VDTB ASSEMBLY



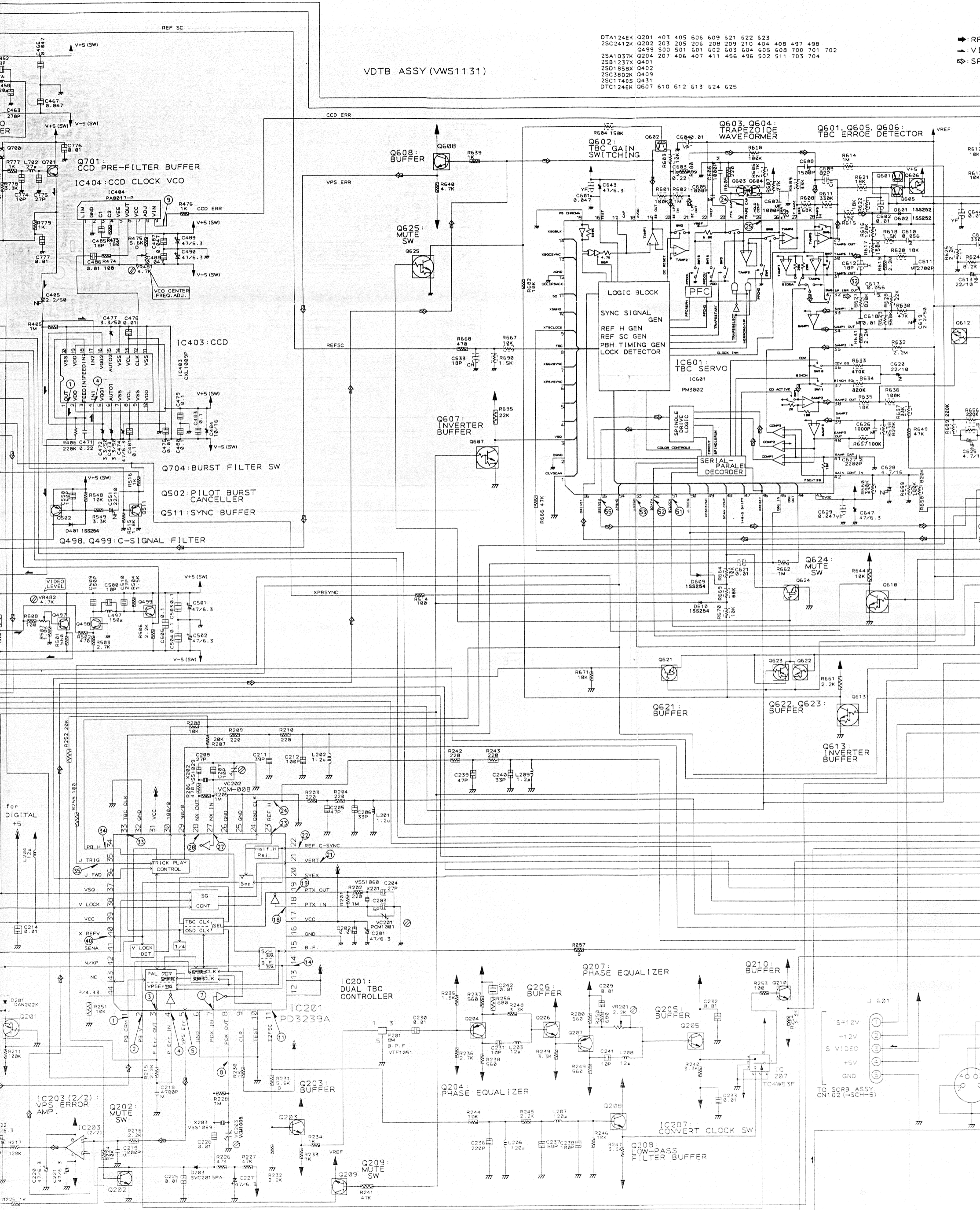
- J 604
- 1 PBHD
 - 2 XRESET
 - 3 VSQ
 - 4 XPAL
 - 5 DIRECT
 - 6 X PLAY
 - 7 NR
- TO PALB ASSY J604 (-SCH-4)

SCH-3

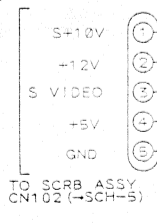
VDTB ASSY

VDTB ASSY (VWS1131)

DTA124EK	Q201	403	405	606	609	621	622	623			
2SC2412K	Q202	203	205	206	208	209	210	404	408	497	498
Q499	500	501	601	602	603	604	605	608	700	701	702
2SA1037K	Q204	207	406	407	411	456	496	502	511	703	704
2SB1237X	Q401										
2S01858X	Q402										
2SC3802K	Q409										
2SC1740S	Q431										
DTC124EK	Q607	610	612	613	624	625					



→ RF
 → V
 → SF

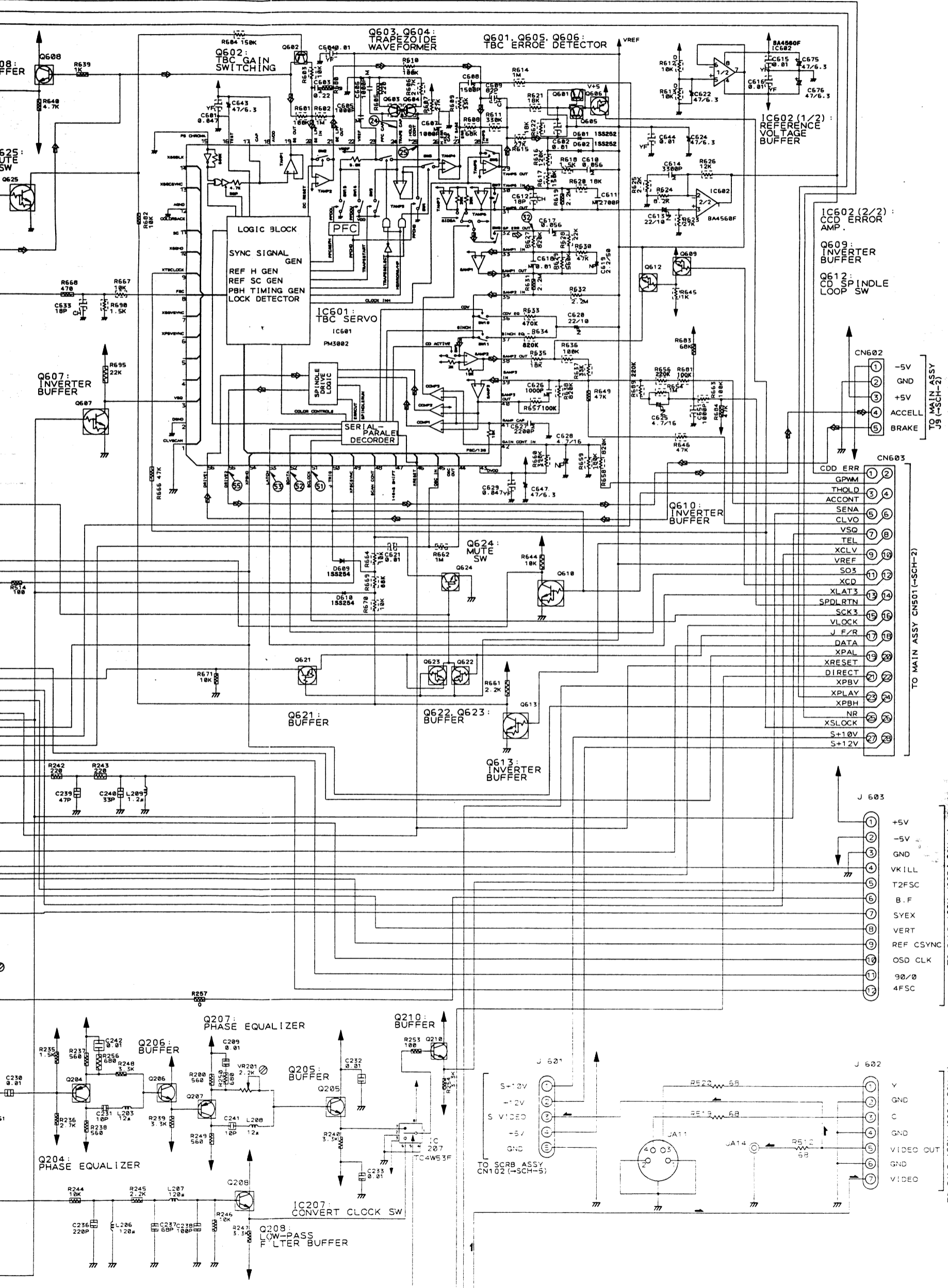


SCH-3

- DTA124EK Q201 403 405 606 609 621 622 623
- 25C2412K Q202 203 205 206 208 209 210 404 408 497 498
- Q499 500 501 601 602 603 604 605 608 700 701 702
- 25A1037K Q204 207 406 407 411 456 496 502 511 703 704
- 25B1237X Q401
- 25D1858X Q402
- 25C3802K Q403
- 25C1740S Q431
- DTC124EK Q607 610 612 613 624 625

RF SIGNAL LINE
 VIDEO SIGNAL LINE
 SPINDLE SERVO LOOP LINE

ASSY (VWS1131)



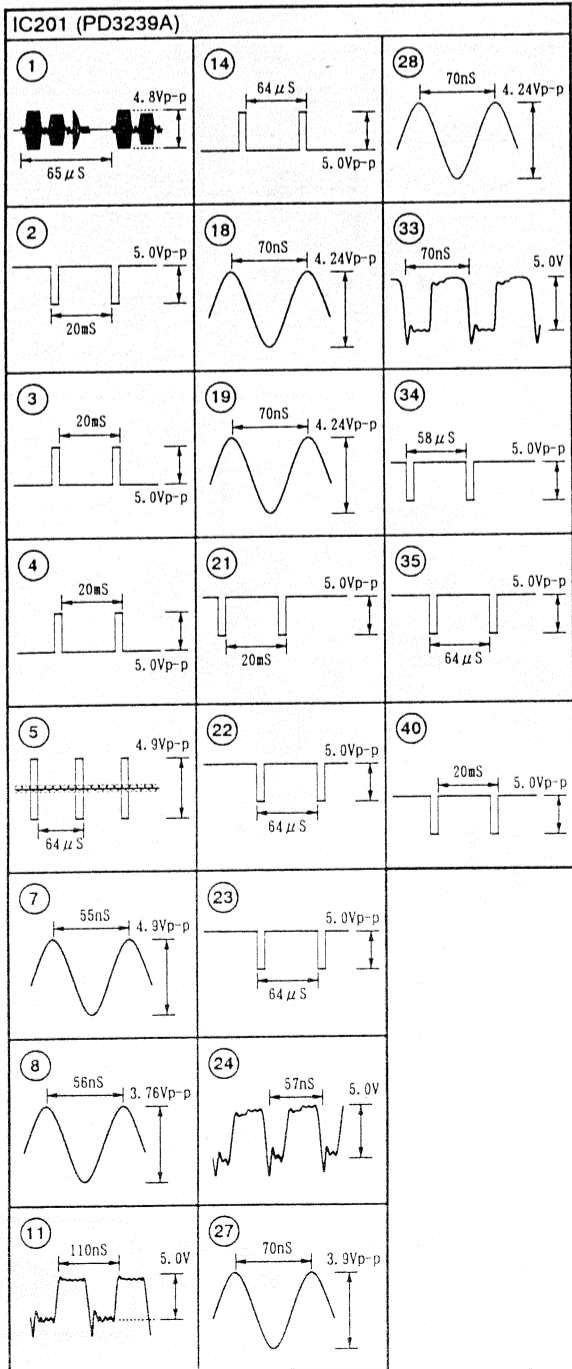
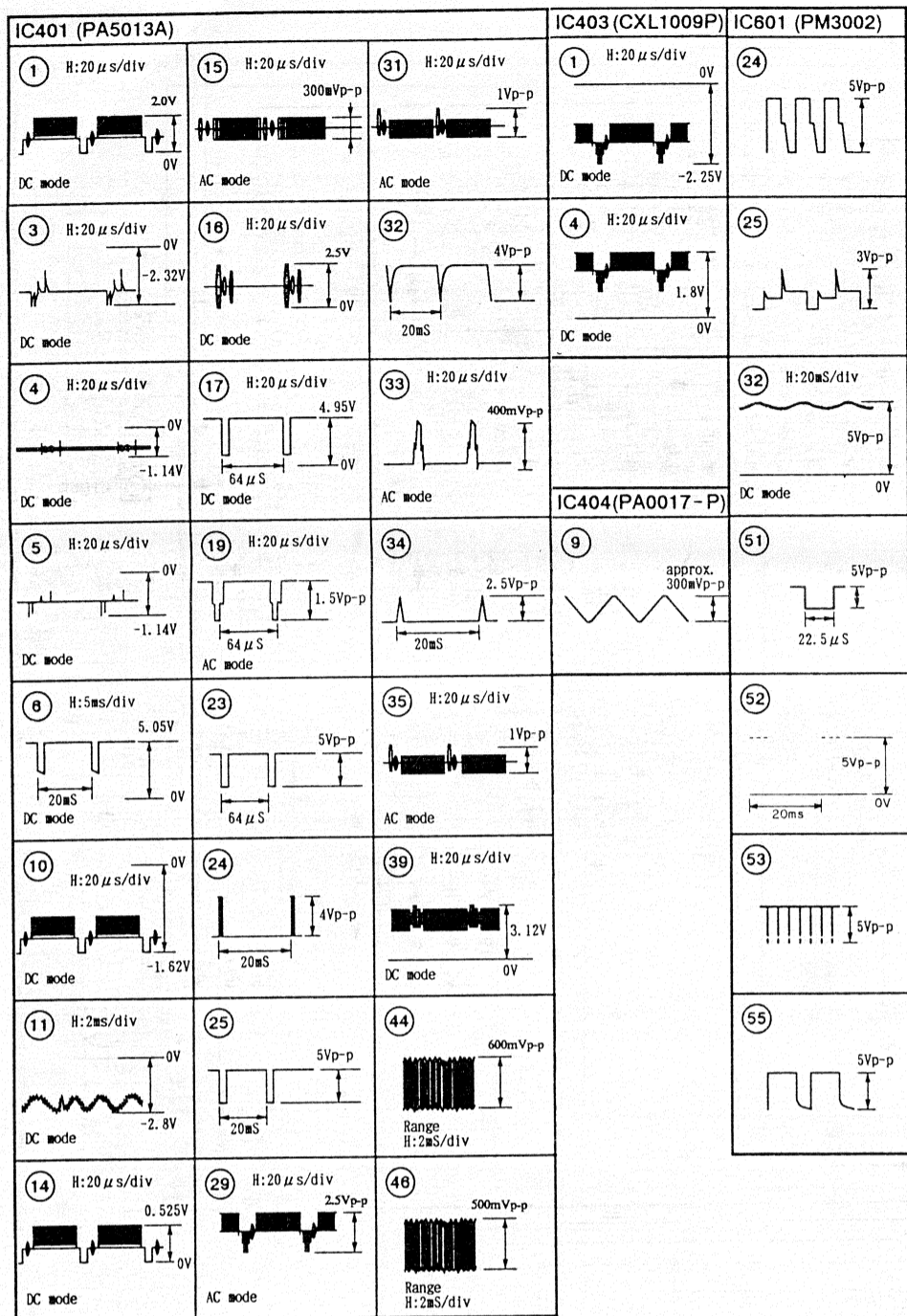
A
 B
 C
 D
 E
 F

VDTB ASSY

SCH-3

VDTB ASSEMBLY

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

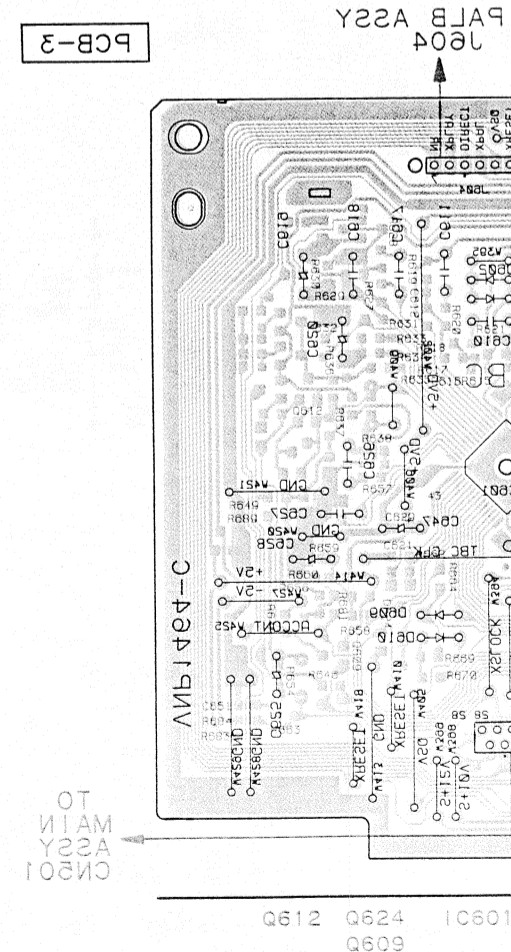
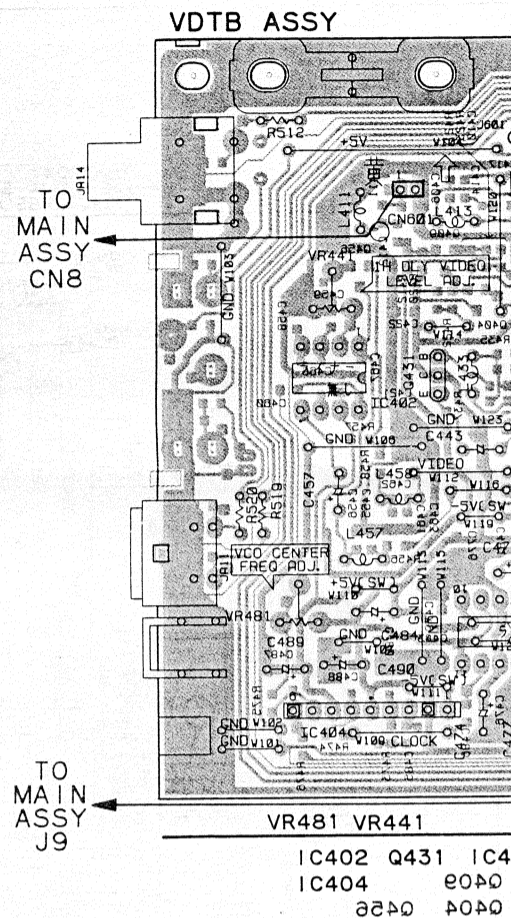


Note: These waveforms and voltage are in the PAL DISC playback.

● IC201 (PD3239A)

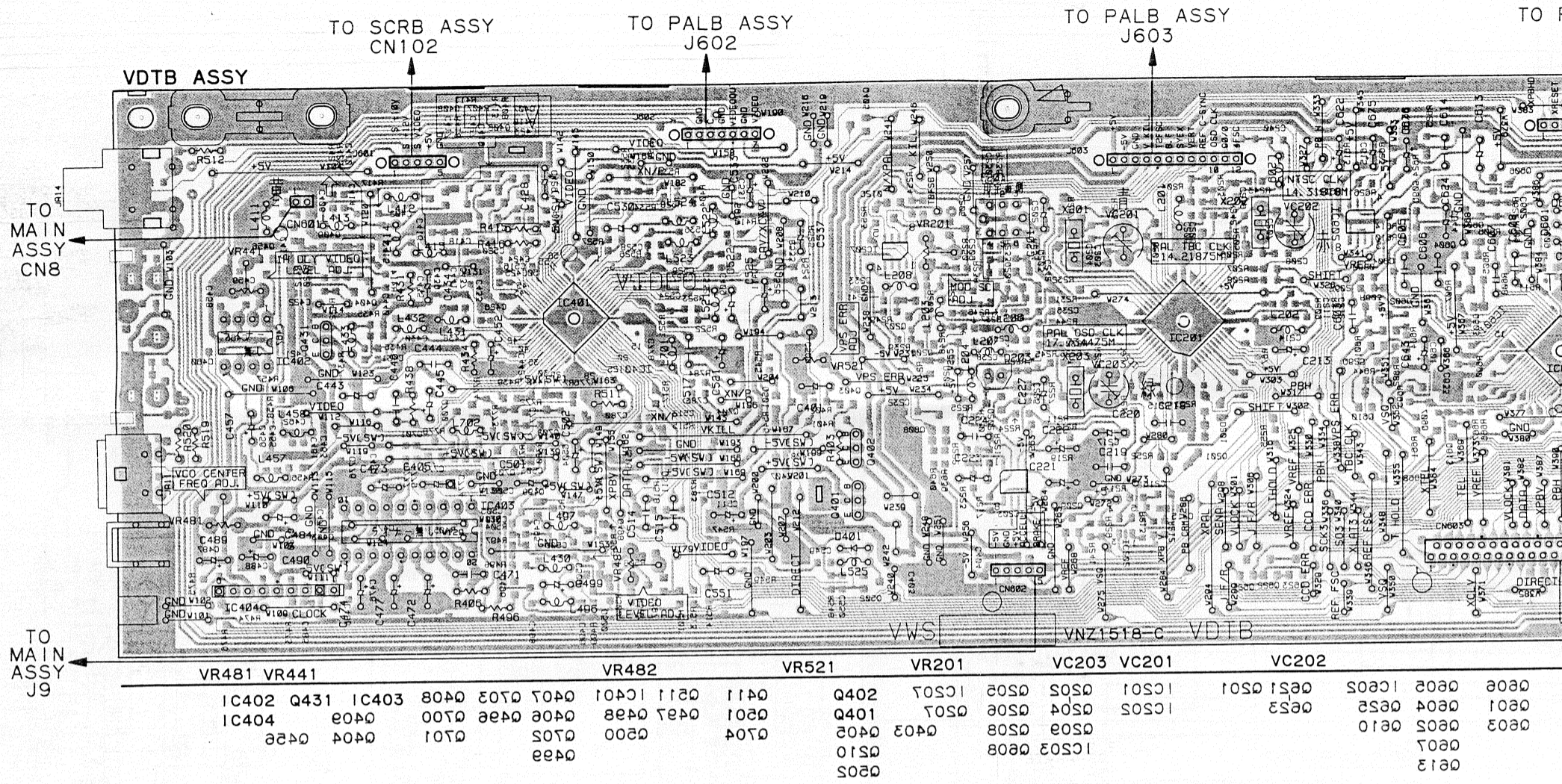
Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	*	12	5.0	23	*	34	*
2	*	13	5.0	24	*	35	*
3	*	14	*	25	0	36	5.0
4	*	15	5.0	26	0	37	5.0
5	*	16	0	27	*	38	5.0
6	0	17	5.0	28	*	39	5.0
7	*	18	*	29	5.0	40	*
8	*	19	*	30	5.0	41	0
9	5.0	20	5.0	31	5.0	42	0
10	0	21	*	32	0	43	5.0
11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

*: Refer to waveforms



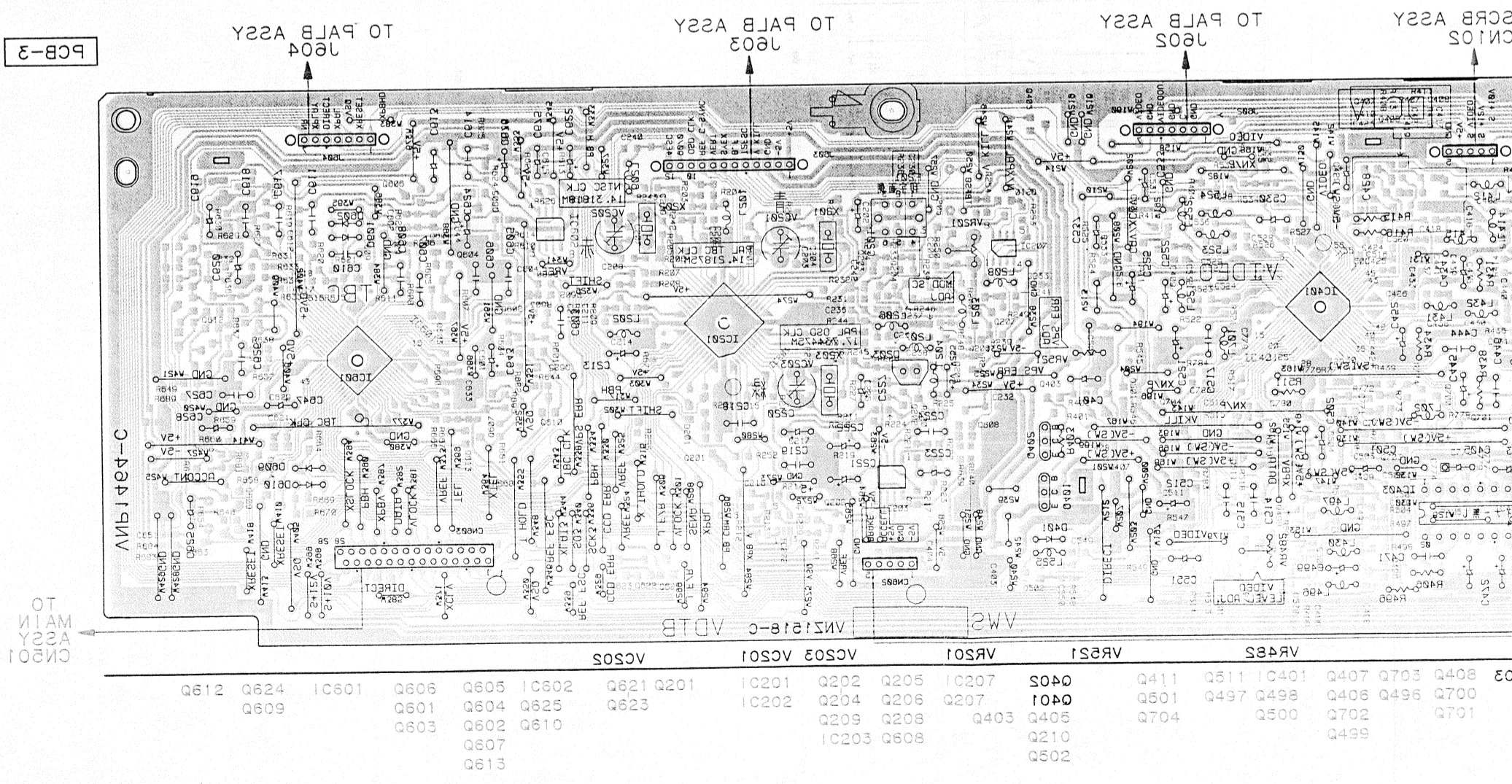
Q612 Q624 IC601
Q609

● This diagram is viewed



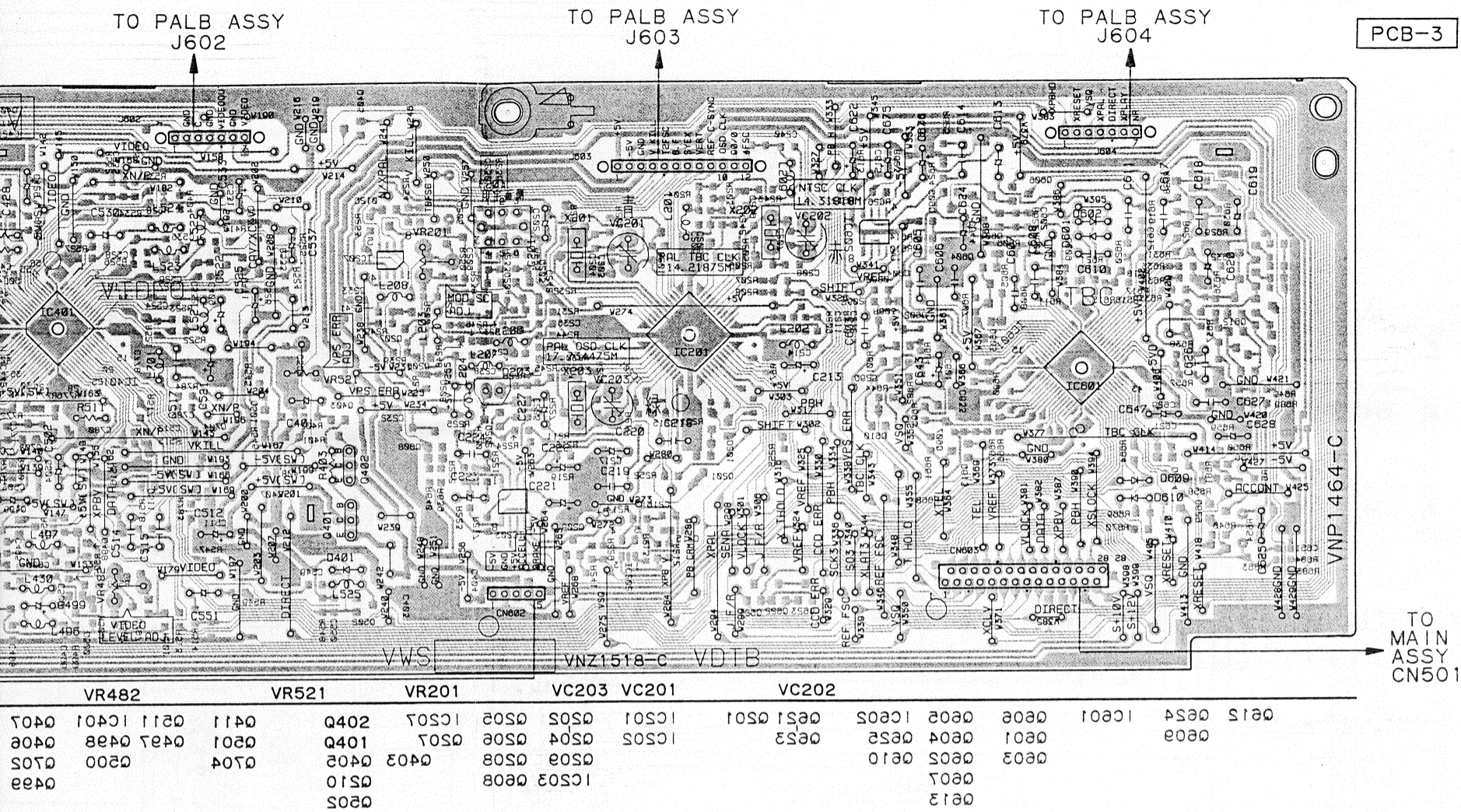
● This diagram

PCB-3



• This diagram is viewed from the mounted parts side.

A



• This diagram is viewed from the foil side.

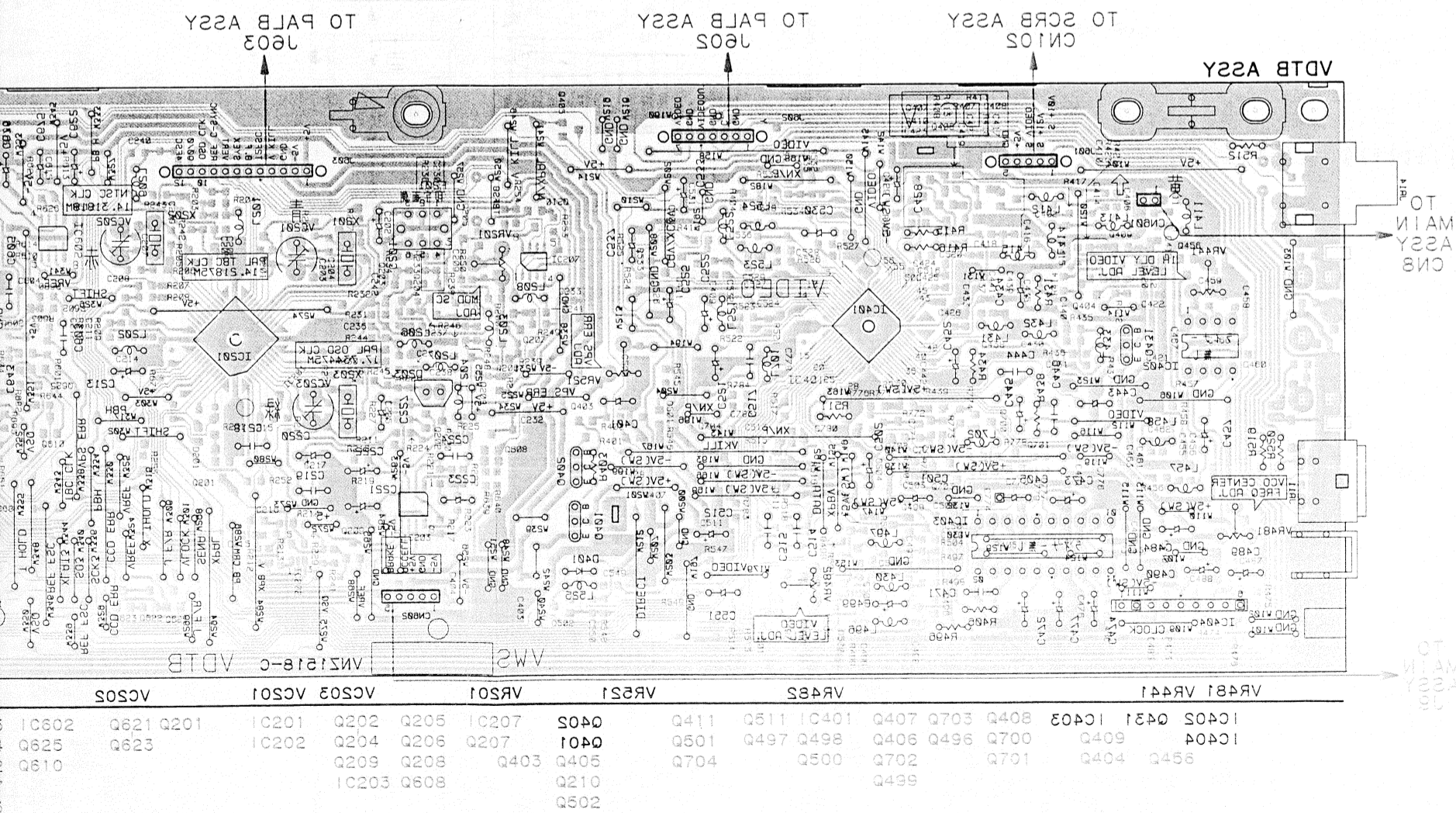
B

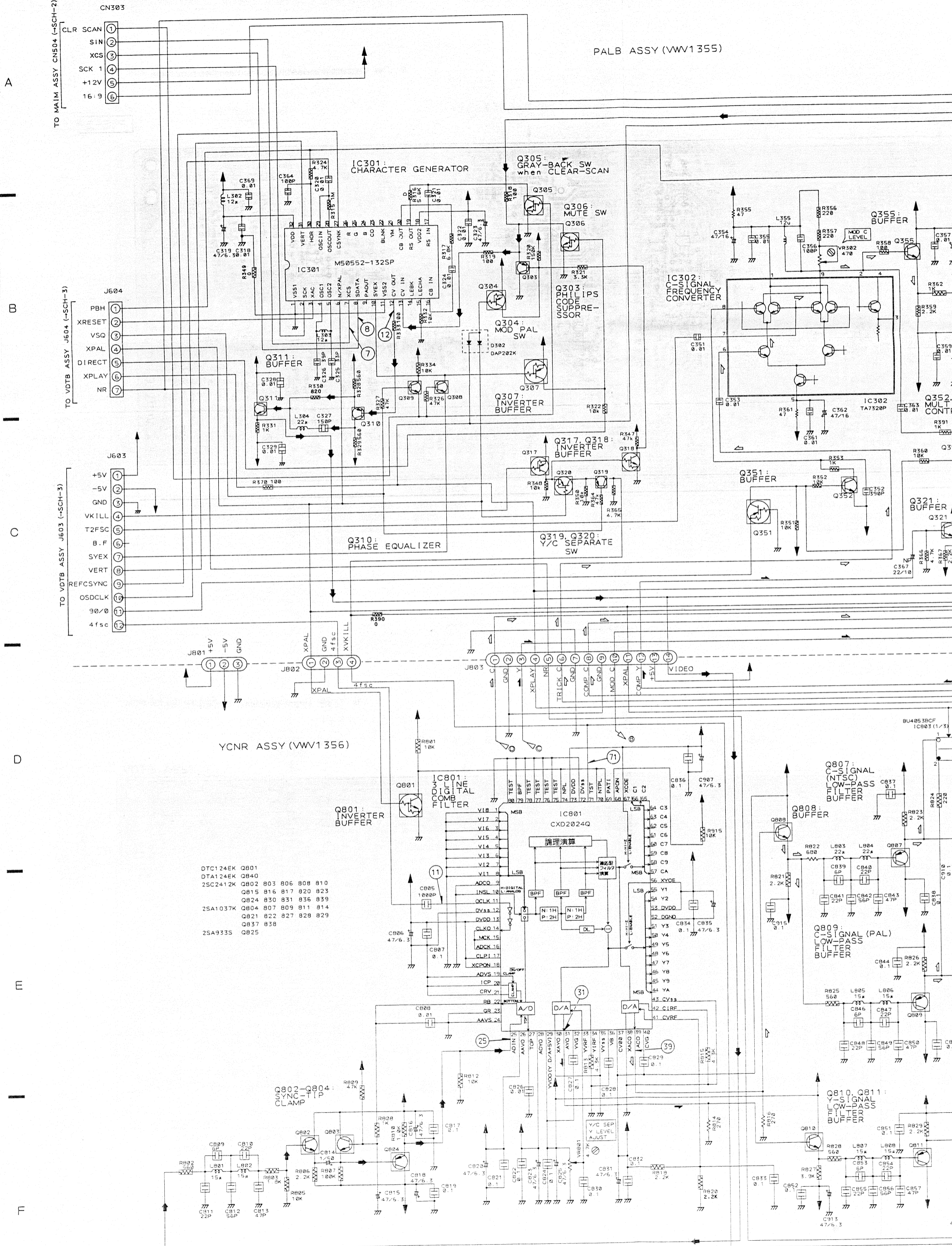
C

D

E

F





- DTC124EK Q801
- DTA124EK Q840
- 2SC2412K Q802
- Q803 806 808 810
- Q815 816 817 820 823
- Q824 830 831 836 839
- 2SA1037K Q804
- Q807 809 811 814
- Q821 822 827 828 829
- Q837 838
- 2SA9335 Q825

SCH-4

PALB ASSY,
YCNR ASSY

SCH-4

- DTA124EK Q301 304 307 312 313 317 320 351
- DTC124EK Q305 306 318
- 25C2412K Q302 308 309 311 321 322 352 353
- Q355 356 359 360 953
- 25A1037K Q303 310 314 319 363
- 25C1740S Q315 316 361 365

◆: VIDEO SIGNAL LINE
 ▲: Y-SIGNAL LINE
 ▲: C-SIGNAL LINE

A

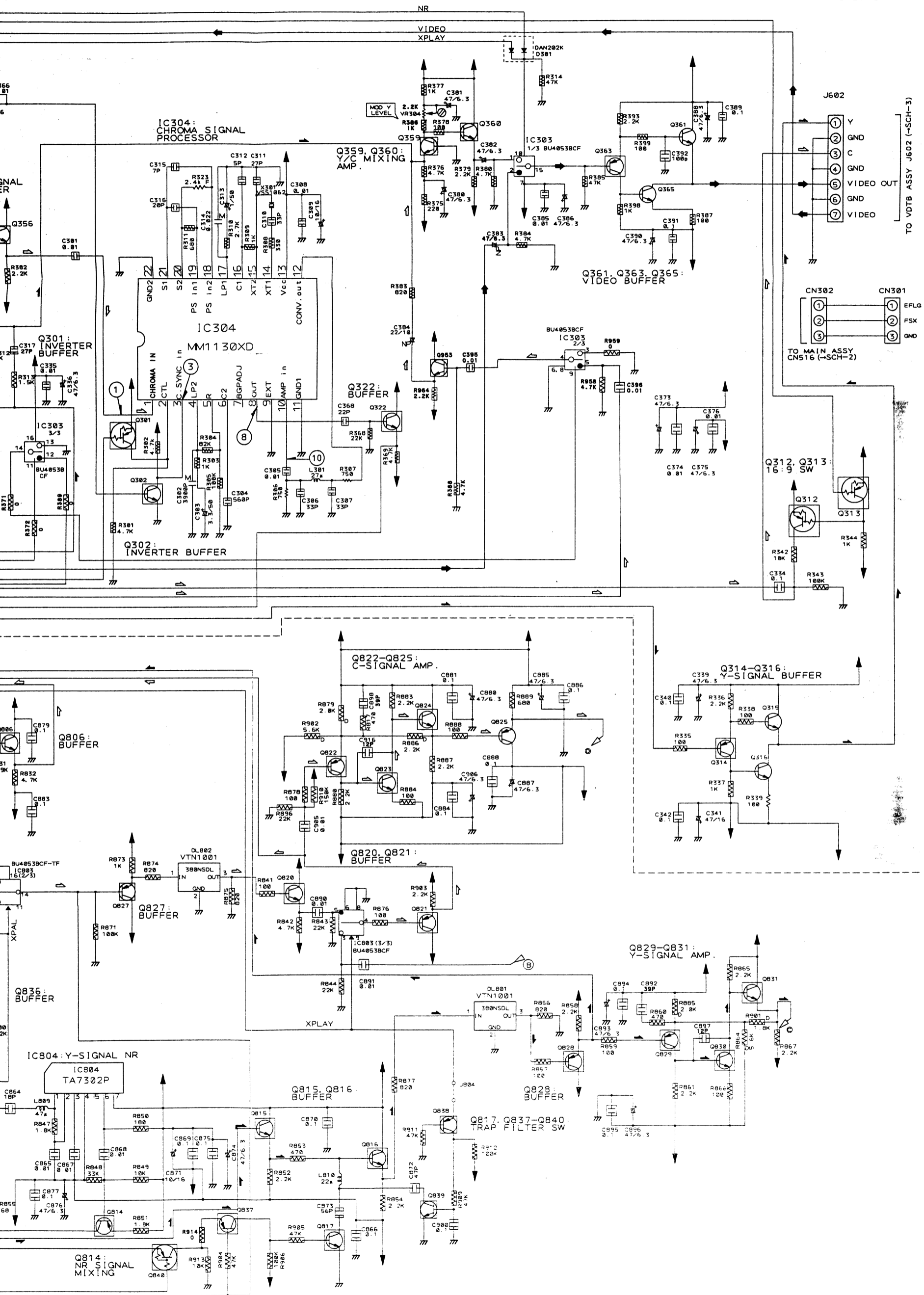
B

C

D

E

F



PALB ASSY, YCNR ASSY

SCH-4

This diagram is viewed from the mounted parts side.

8

A

B

C

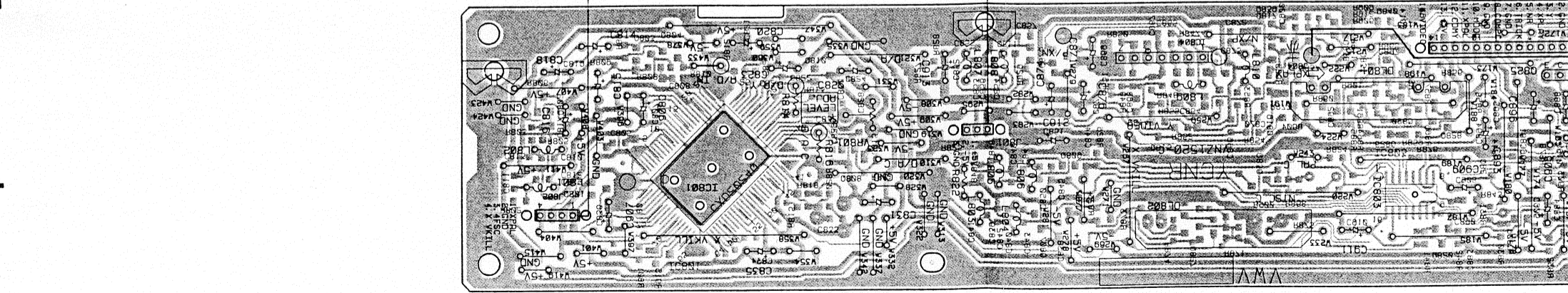
D

E

9280 9380 9480 9580 9680 9780 9880 9980

1080 1180 1280 1380 1480 1580 1680 1780

1880 1980 2080 2180 2280 2380 2480 2580



TO MAIN ASSY CN516

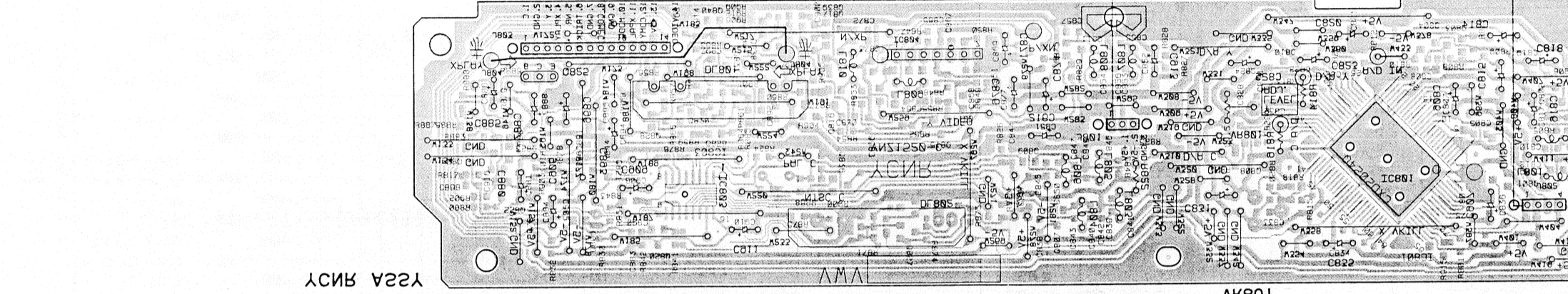
TO MAIN ASSY CN504

TO VDTB ASSY J604

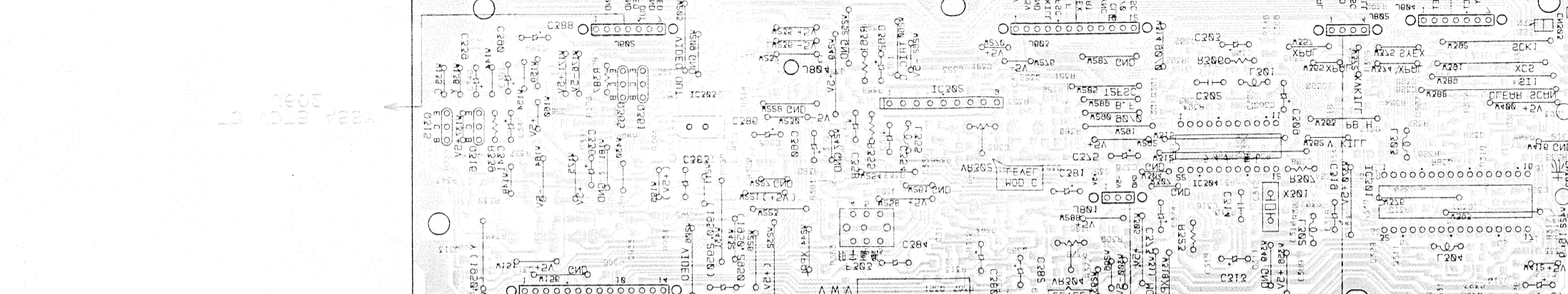
VNP1464-C

8120	1120	1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	2430	2530	2630	2730	2830	2930	3030	3130	3230	3330	3430	3530	3630	3730	3830	3930	4030	4130	4230	4330	4430	4530	4630	4730	4830	4930	5030	5130	5230	5330	5430	5530	5630	5730	5830	5930	6030	6130	6230	6330	6430	6530	6630	6730	6830	6930	7030	7130	7230	7330	7430	7530	7630	7730	7830	7930	8030	8130	8230	8330	8430	8530	8630	8730	8830	8930	9030	9130	9230	9330	9430	9530	9630	9730	9830	9930	10030
------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	-------

VR302 VR304



Y22A PNCY

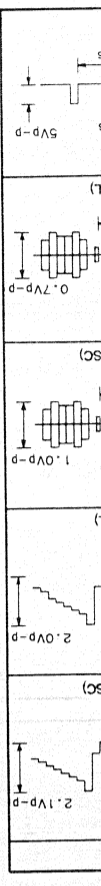


Y22A BLAP

VR302 VR304

10301 0311 0319 0320 0321 0322 0323 0324 0325 0326 0327 0328 0329 0330 0331 0332 0333 0334 0335 0336 0337 0338 0339 0340 0341 0342 0343 0344 0345 0346 0347 0348 0349 0350 0351 0352 0353 0354 0355 0356 0357 0358 0359 0360 0361 0362 0363 0364 0365 0366 0367 0368 0369 0370 0371 0372 0373 0374 0375 0376 0377 0378 0379 0380 0381 0382 0383 0384 0385 0386 0387 0388 0389 0390 0391 0392 0393 0394 0395 0396 0397 0398 0399 0400 0401 0402 0403 0404 0405 0406 0407 0408 0409 0410 0411 0412 0413 0414 0415 0416 0417 0418 0419 0420 0421 0422 0423 0424 0425 0426 0427 0428 0429 0430 0431 0432 0433 0434 0435 0436 0437 0438 0439 0440 0441 0442 0443 0444 0445 0446 0447 0448 0449 0450 0451 0452 0453 0454 0455 0456 0457 0458 0459 0460 0461 0462 0463 0464 0465 0466 0467 0468 0469 0470 0471 0472 0473 0474 0475 0476 0477 0478 0479 0480 0481 0482 0483 0484 0485 0486 0487 0488 0489 0490 0491 0492 0493 0494 0495 0496 0497 0498 0499 0500

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



● IC801 (CXD2240)

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

Pin No.	Pin Voltage [V]	Pin No.	Pin Voltage [V]
1	3.2	7	1.8
2	—	8	2.9
3	—	9	0
4	2.0	10	2.6
5	2.1	11	0
6	1.9	12	2.6
		13	0
		14	3.0
		15	3.7
		16	3.7
		17	2.6
		18	3.3
		19	3.3
		20	3.3
		21	2.2
		22	0

● IC304 (MM130XD)

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

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

● IC301 (M5052-132SP)

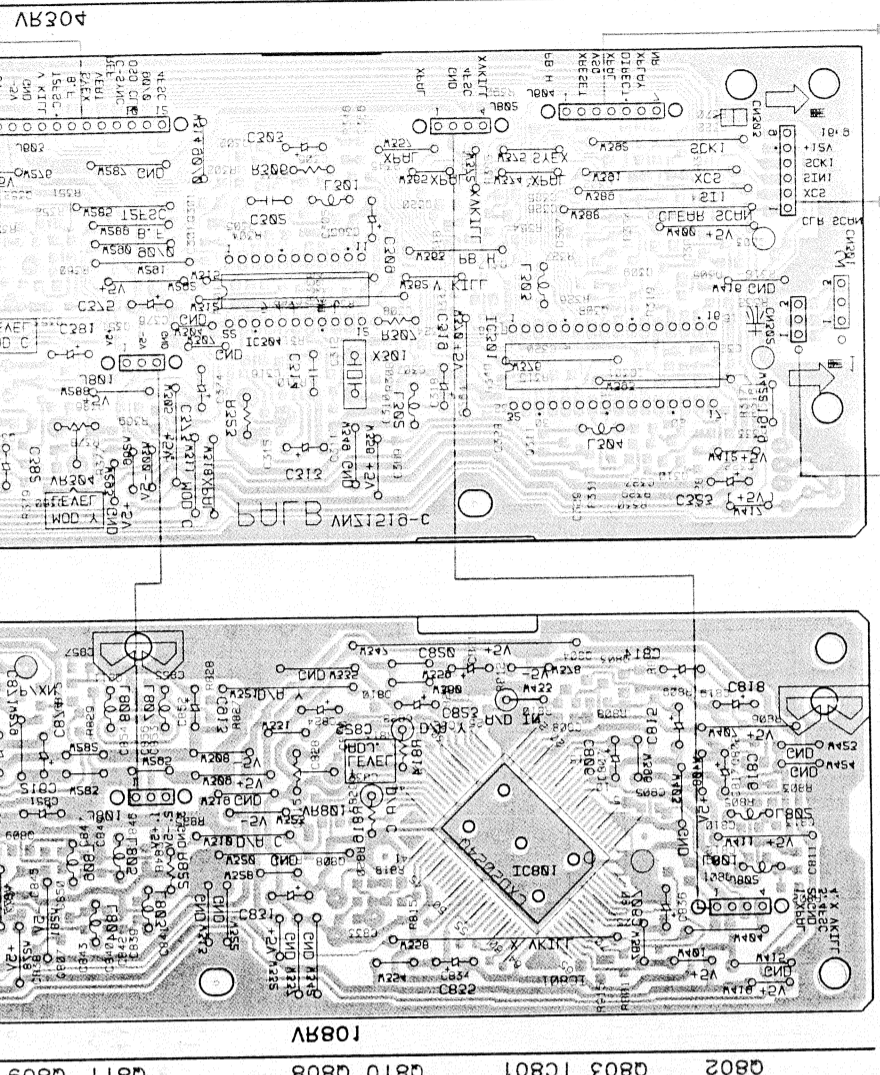
Note: These waveforms and voltage are in the play mode.

C-PAR1P1WV

4031 4031 4031 4031 4031

4031 4031

Y52A BITV OT
Y52A MIAM OT
Y52A MIAM OT

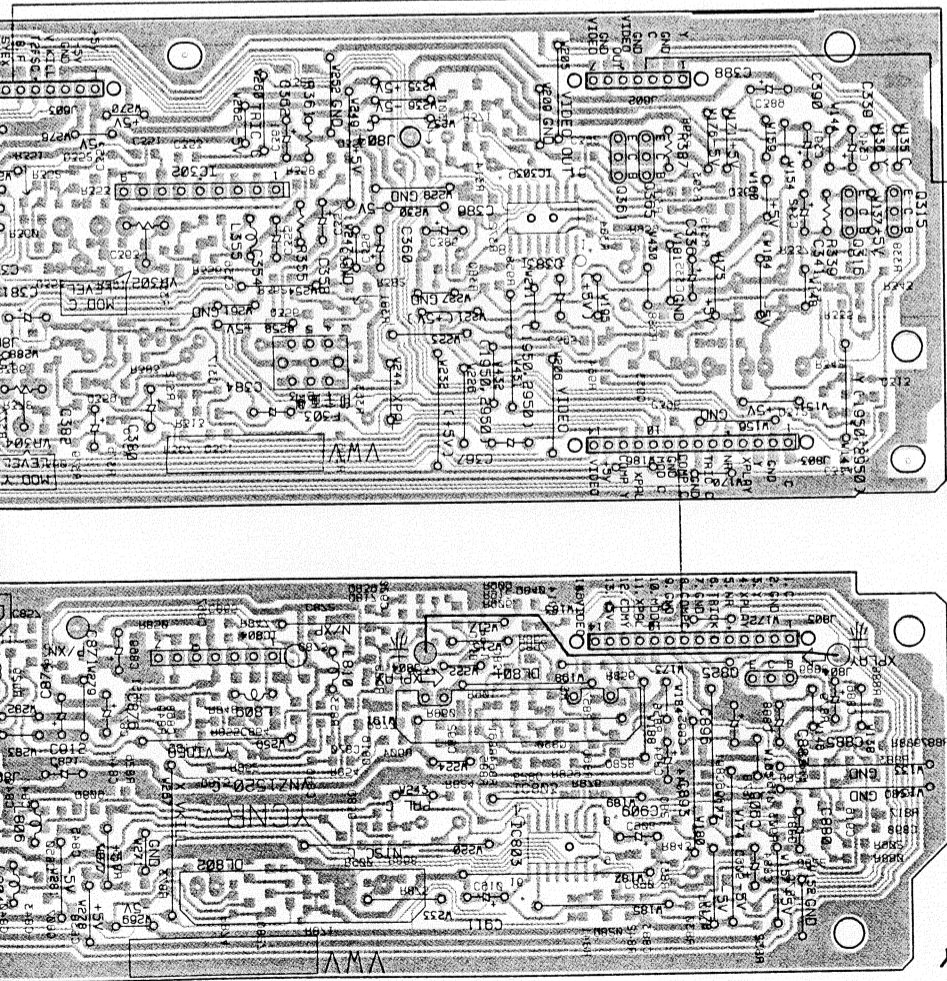


P-PCB

Q807 Q811 Q809 Q804 Q803 IC801 Q810 Q808 Q802

Q315 Q316 Q350 Q365 Q361 Q350 Q351 Q352 Q353 Q354 Q355 Q356 Q357 Q358 Q359 Q360 Q361 Q362 Q363 Q364 Q365 Q366 Q367 Q368 Q369 Q370 Q371 Q372 Q373 Q374 Q375 Q376 Q377 Q378 Q379 Q380 Q381 Q382 Q383 Q384 Q385 Q386 Q387 Q388 Q389 Q390 Q391 Q392 Q393 Q394 Q395 Q396 Q397 Q398 Q399 Q400 Q401 Q402 Q403 Q404 Q405 Q406 Q407 Q408 Q409 Q410 Q411 Q412 Q413 Q414 Q415 Q416 Q417 Q418 Q419 Q420 Q421 Q422 Q423 Q424 Q425 Q426 Q427 Q428 Q429 Q430 Q431 Q432 Q433 Q434 Q435 Q436 Q437 Q438 Q439 Q440 Q441 Q442 Q443 Q444 Q445 Q446 Q447 Q448 Q449 Q450 Q451 Q452 Q453 Q454 Q455 Q456 Q457 Q458 Q459 Q460 Q461 Q462 Q463 Q464 Q465 Q466 Q467 Q468 Q469 Q470 Q471 Q472 Q473 Q474 Q475 Q476 Q477 Q478 Q479 Q480 Q481 Q482 Q483 Q484 Q485 Q486 Q487 Q488 Q489 Q490 Q491 Q492 Q493 Q494 Q495 Q496 Q497 Q498 Q499 Q500 Q501 Q502 Q503 Q504 Q505 Q506 Q507 Q508 Q509 Q510 Q511 Q512 Q513 Q514 Q515 Q516 Q517 Q518 Q519 Q520 Q521 Q522 Q523 Q524 Q525 Q526 Q527 Q528 Q529 Q530 Q531 Q532 Q533 Q534 Q535 Q536 Q537 Q538 Q539 Q540 Q541 Q542 Q543 Q544 Q545 Q546 Q547 Q548 Q549 Q550 Q551 Q552 Q553 Q554 Q555 Q556 Q557 Q558 Q559 Q560 Q561 Q562 Q563 Q564 Q565 Q566 Q567 Q568 Q569 Q570 Q571 Q572 Q573 Q574 Q575 Q576 Q577 Q578 Q579 Q580 Q581 Q582 Q583 Q584 Q585 Q586 Q587 Q588 Q589 Q590 Q591 Q592 Q593 Q594 Q595 Q596 Q597 Q598 Q599 Q600 Q601 Q602 Q603 Q604 Q605 Q606 Q607 Q608 Q609 Q610 Q611 Q612 Q613 Q614 Q615 Q616 Q617 Q618 Q619 Q620 Q621 Q622 Q623 Q624 Q625 Q626 Q627 Q628 Q629 Q630 Q631 Q632 Q633 Q634 Q635 Q636 Q637 Q638 Q639 Q640 Q641 Q642 Q643 Q644 Q645 Q646 Q647 Q648 Q649 Q650 Q651 Q652 Q653 Q654 Q655 Q656 Q657 Q658 Q659 Q660 Q661 Q662 Q663 Q664 Q665 Q666 Q667 Q668 Q669 Q670 Q671 Q672 Q673 Q674 Q675 Q676 Q677 Q678 Q679 Q680 Q681 Q682 Q683 Q684 Q685 Q686 Q687 Q688 Q689 Q690 Q691 Q692 Q693 Q694 Q695 Q696 Q697 Q698 Q699 Q700 Q701 Q702 Q703 Q704 Q705 Q706 Q707 Q708 Q709 Q710 Q711 Q712 Q713 Q714 Q715 Q716 Q717 Q718 Q719 Q720 Q721 Q722 Q723 Q724 Q725 Q726 Q727 Q728 Q729 Q730 Q731 Q732 Q733 Q734 Q735 Q736 Q737 Q738 Q739 Q740 Q741 Q742 Q743 Q744 Q745 Q746 Q747 Q748 Q749 Q750 Q751 Q752 Q753 Q754 Q755 Q756 Q757 Q758 Q759 Q760 Q761 Q762 Q763 Q764 Q765 Q766 Q767 Q768 Q769 Q770 Q771 Q772 Q773 Q774 Q775 Q776 Q777 Q778 Q779 Q780 Q781 Q782 Q783 Q784 Q785 Q786 Q787 Q788 Q789 Q790 Q791 Q792 Q793 Q794 Q795 Q796 Q797 Q798 Q799 Q800 Q801 Q802 Q803 Q804 Q805 Q806 Q807 Q808 Q809 Q810 Q811 Q812 Q813 Q814 Q815 Q816 Q817 Q818 Q819 Q820 Q821 Q822 Q823 Q824 Q825 Q826 Q827 Q828 Q829 Q830 Q831 Q832 Q833 Q834 Q835 Q836 Q837 Q838 Q839 Q840 Q841 Q842 Q843 Q844 Q845 Q846 Q847 Q848 Q849 Q850 Q851 Q852 Q853 Q854 Q855 Q856 Q857 Q858 Q859 Q860 Q861 Q862 Q863 Q864 Q865 Q866 Q867 Q868 Q869 Q870 Q871 Q872 Q873 Q874 Q875 Q876 Q877 Q878 Q879 Q880 Q881 Q882 Q883 Q884 Q885 Q886 Q887 Q888 Q889 Q890 Q891 Q892 Q893 Q894 Q895 Q896 Q897 Q898 Q899 Q900 Q901 Q902 Q903 Q904 Q905 Q906 Q907 Q908 Q909 Q910 Q911 Q912 Q913 Q914 Q915 Q916 Q917 Q918 Q919 Q920 Q921 Q922 Q923 Q924 Q925 Q926 Q927 Q928 Q929 Q930 Q931 Q932 Q933 Q934 Q935 Q936 Q937 Q938 Q939 Q940 Q941 Q942 Q943 Q944 Q945 Q946 Q947 Q948 Q949 Q950 Q951 Q952 Q953 Q954 Q955 Q956 Q957 Q958 Q959 Q960 Q961 Q962 Q963 Q964 Q965 Q966 Q967 Q968 Q969 Q970 Q971 Q972 Q973 Q974 Q975 Q976 Q977 Q978 Q979 Q980 Q981 Q982 Q983 Q984 Q985 Q986 Q987 Q988 Q989 Q990 Q991 Q992 Q993 Q994 Q995 Q996 Q997 Q998 Q999

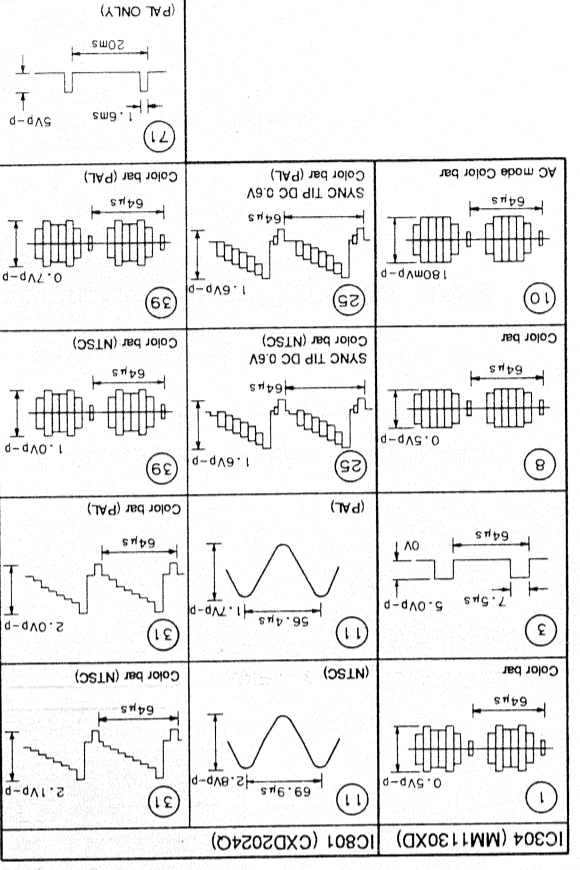
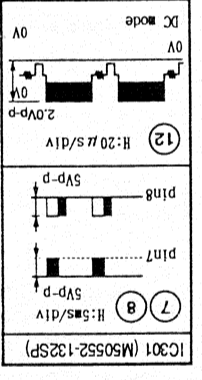
TO VDTB ASSY J603
TO VDTB ASSY J602



5280 0280 1280 1880 2080 2580 2880 3080 3580 4080 4580 4825 5880 6080 6580 6880 7080 7580 7880 8080 8580 8880 9080 9580

PALB AND YCNR ASSEMBLIES

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



IC301 (M50552-132SP)

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

Pin No. [V]	Pin Voltage [V]	Pin No. [V]	Pin Voltage [V]	Pin No. [V]	Pin Voltage [V]	Pin No. [V]	Pin Voltage [V]
1	0	9	0.8	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	-

IC304 (MM1130XD)

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

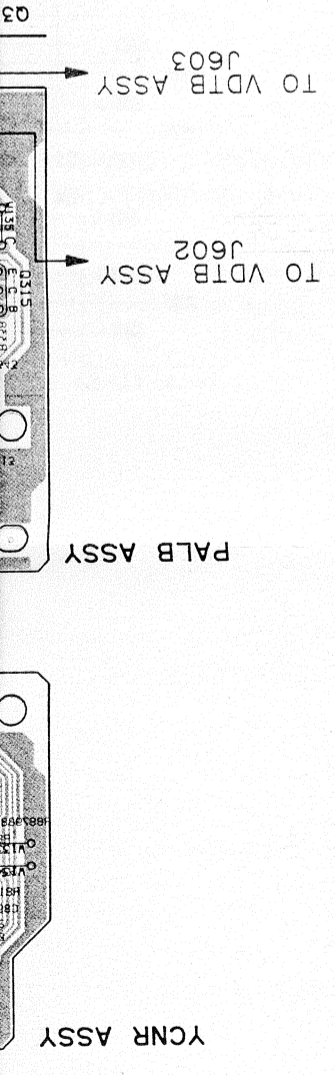
Pin No. [V]	Pin Voltage [V]	Pin No. [V]	Pin Voltage [V]	Pin No. [V]	Pin Voltage [V]	Pin No. [V]	Pin Voltage [V]
1	3.2	7	1.8	13	5.0	19	3.3
2	-	8	2.9	14	3.0	20	3.3
3	-	9	0	15	3.7	21	3.3
4	2.0	10	2.6	16	3.7	22	0
5	2.1	11	0	17	2.6		
6	1.9	12	2.6	18	3.3		

IC801 (CXD2024Q)

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

Pin No. [V]	Pin Voltage [V]	Pin No. [V]	Pin Voltage [V]	Pin No. [V]	Pin Voltage [V]	Pin No. [V]	Pin 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

P-BCP



YCSA NIAM OT
YCSA NIAM OT
YCSA BTDV OT
C-2211111V

2.2.5 SCRB ASSEMBLY

A

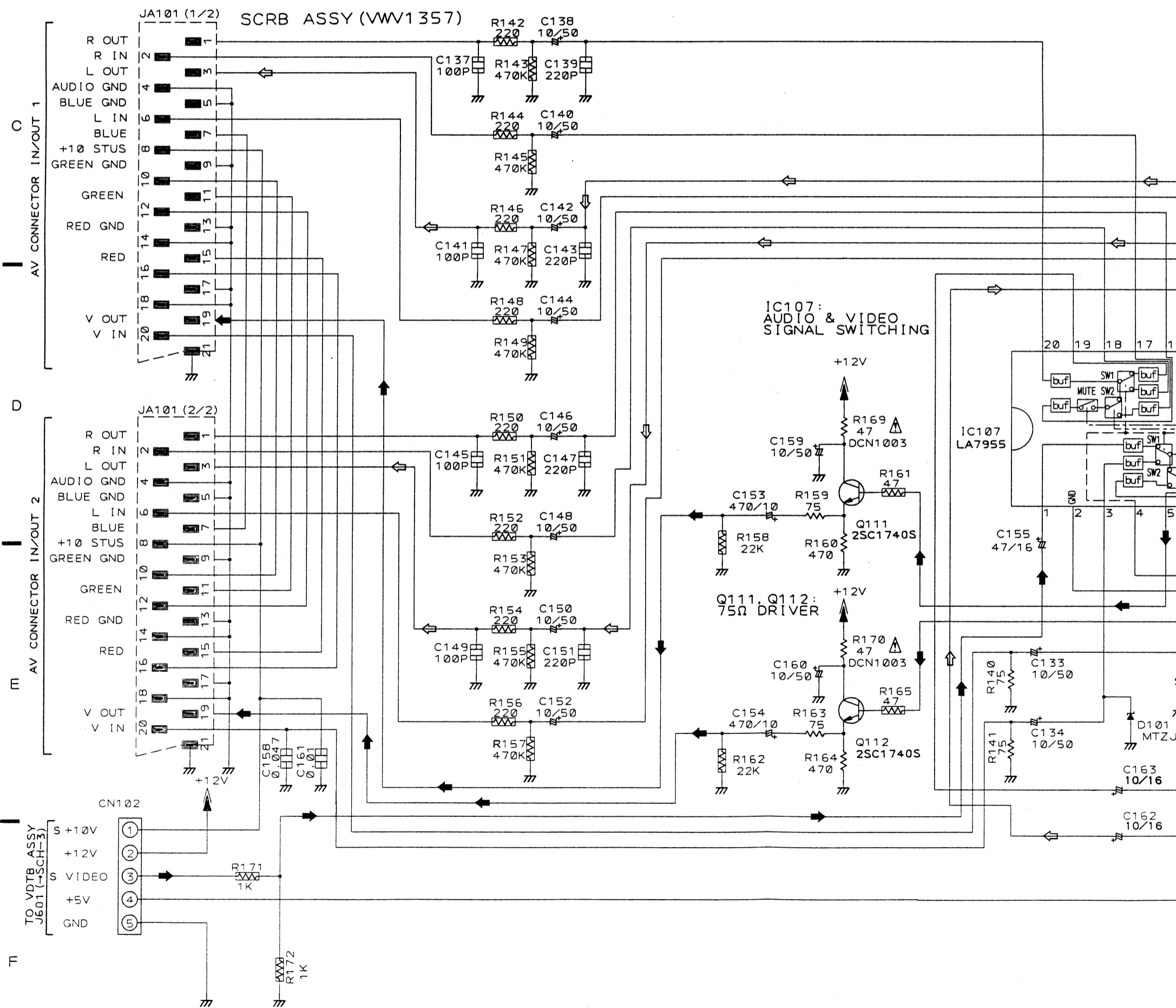
B

C

D

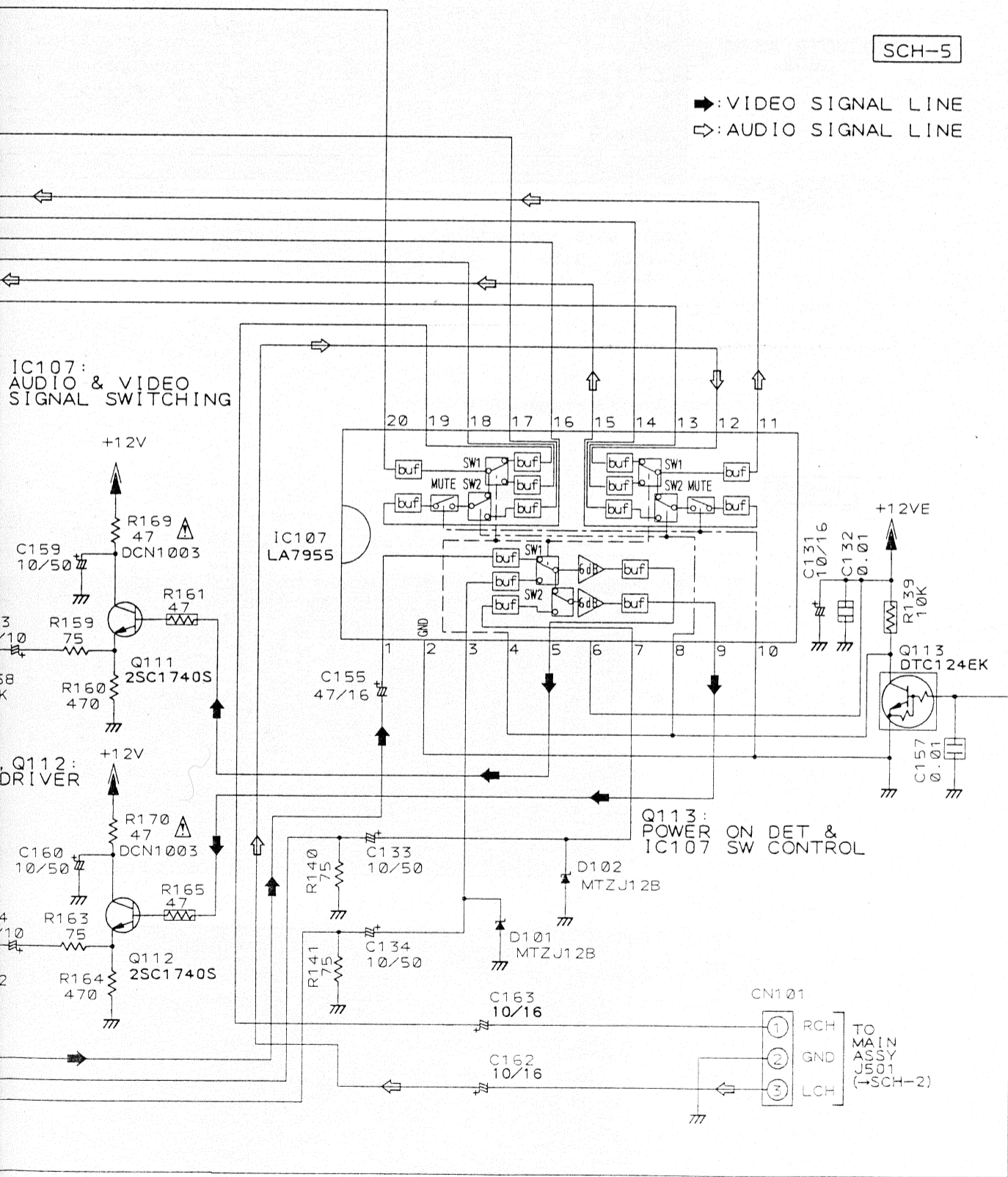
E

F



SCH-5

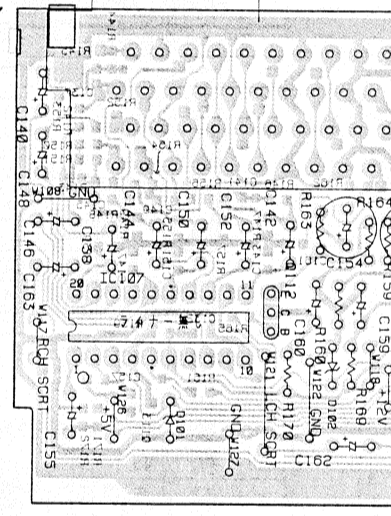
SCRB ASSY



● This diagram is

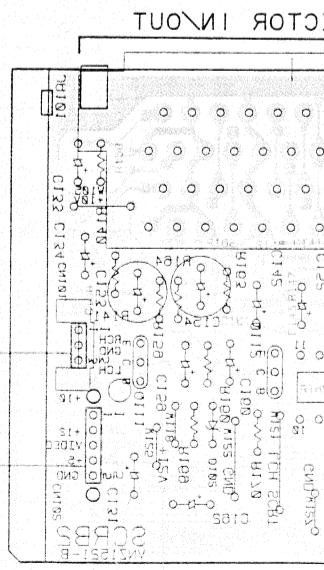
AV CONNECTOR IN/OUT

SCRB ASSY



● This

PCB-2

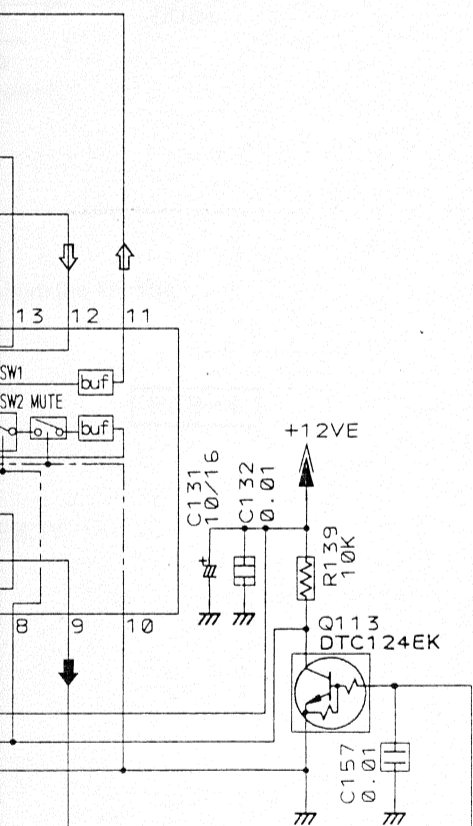


SCRB ASSY

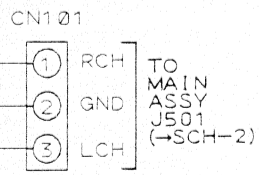
SCH-5

SCH-5

➔: VIDEO SIGNAL LINE
 ⇨: AUDIO SIGNAL LINE



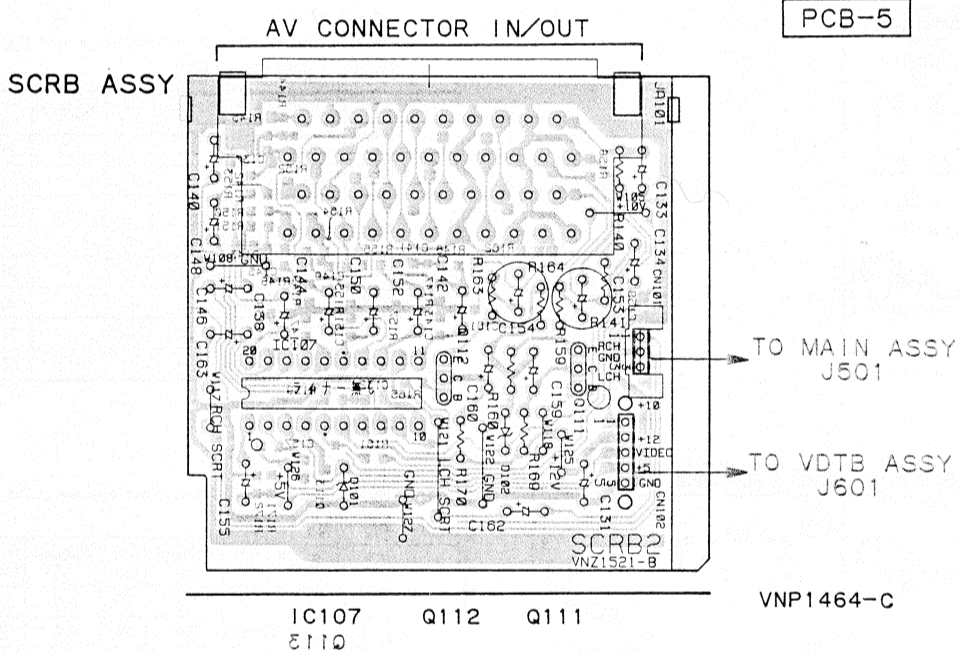
13: POWER ON DET & SW CONTROL
 12: VIDEO SIGNAL LINE
 11: AUDIO SIGNAL LINE



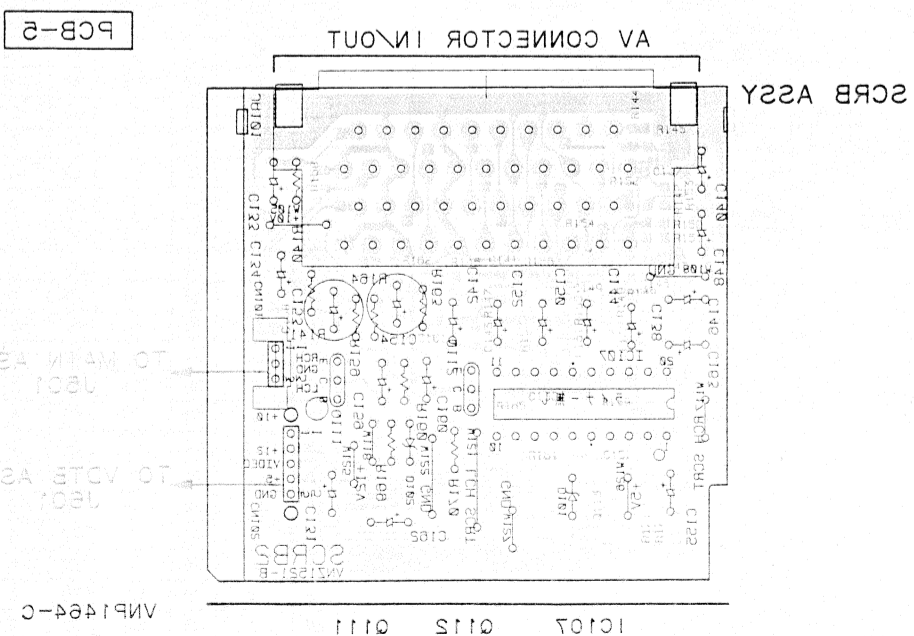
SCR ASSY

SCH-5

● This diagram is viewed from the mounted parts side.



● This diagram is viewed from the foil side.



A
 B
 C
 D
 E
 F

2.3 BLOCK DIAGRAMS

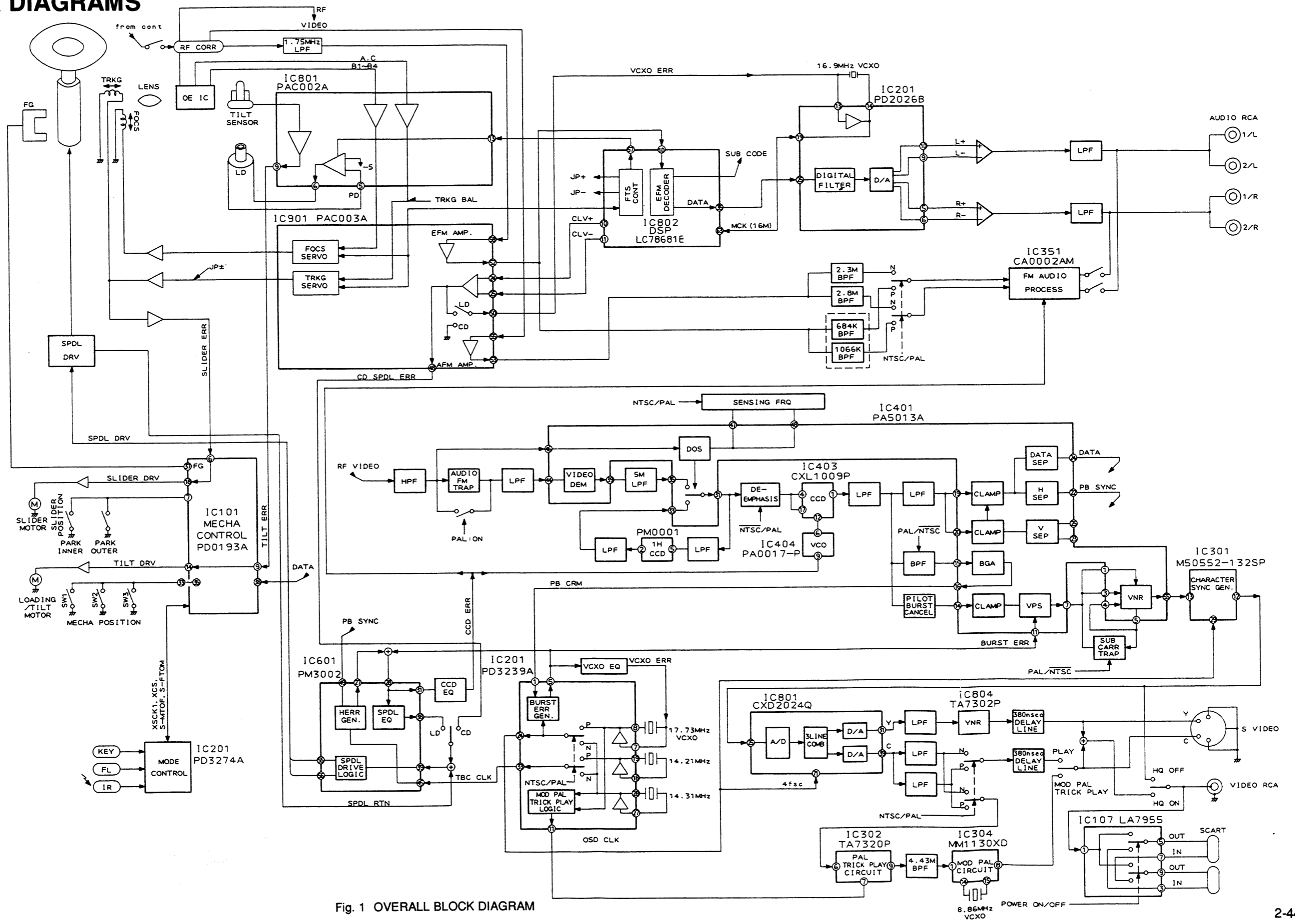


Fig. 1 OVERALL BLOCK DIAGRAM

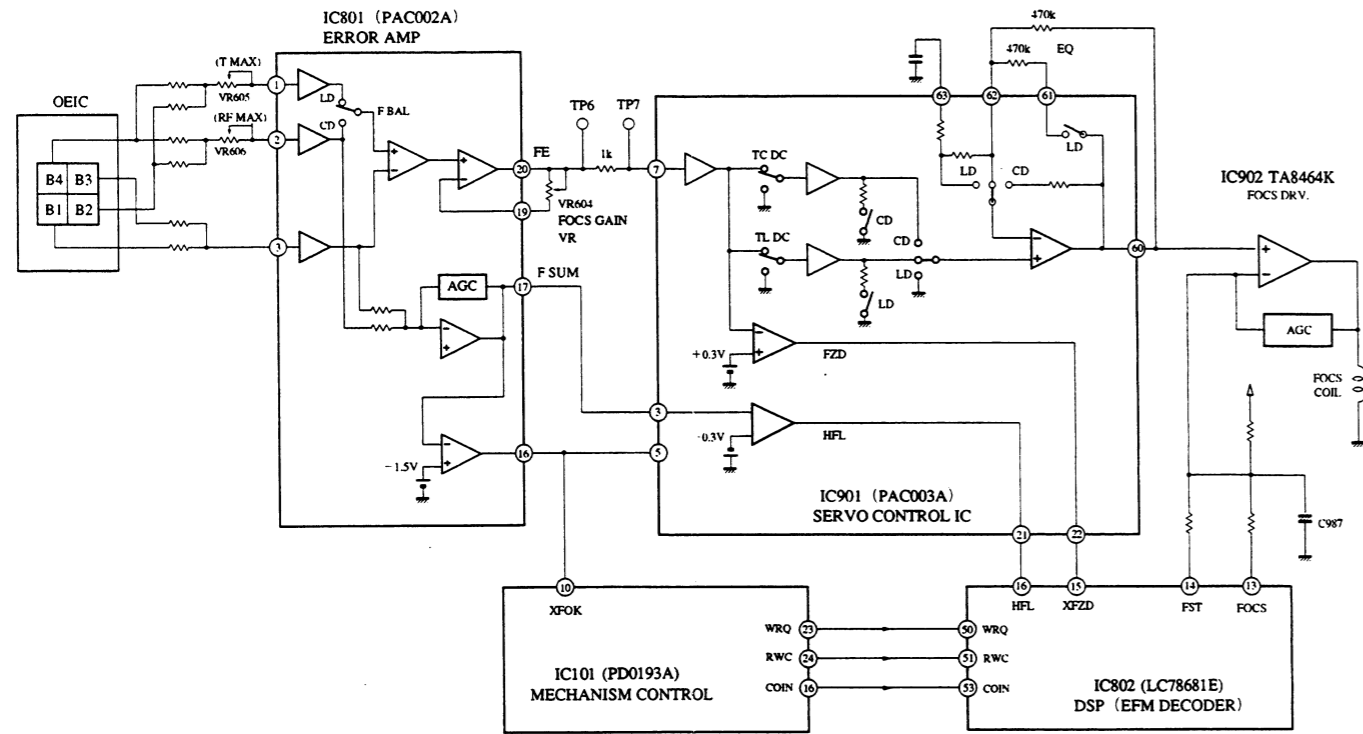


Fig. 2 FOCS SERVO BLOCK DIAGRAM

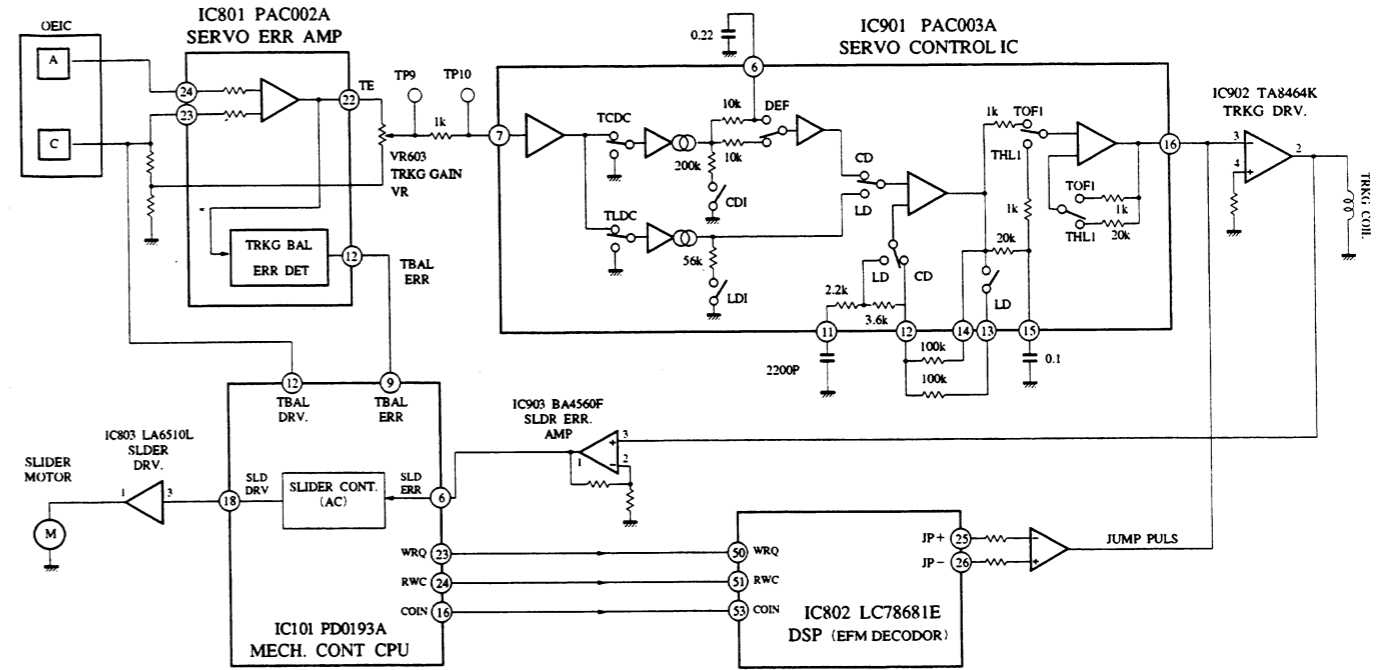


Fig. 3 TRKG & SLDR SERVO BLOCK DIAGRAM