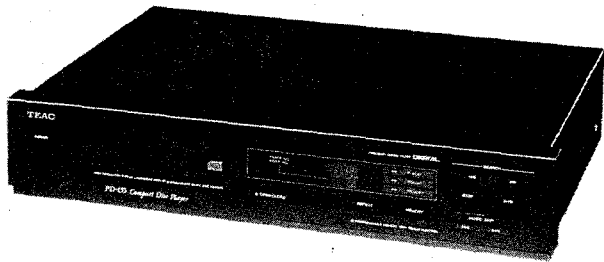


# TEAC®



## SERVICE MANUAL

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# PD-155

Compact Disc Player

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COMPACT  
disc  
DIGITAL AUDIO

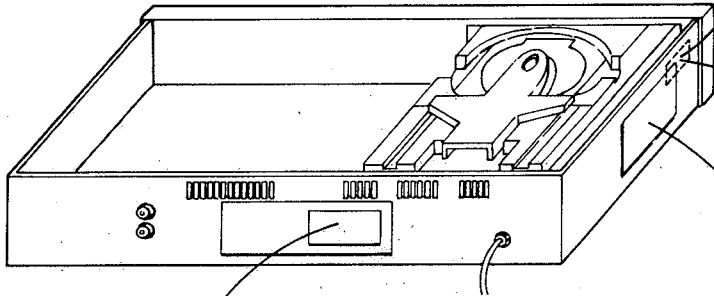
# SAFETY CERTIFICATION

SICHERHEITSBESTIMMUNGEN / CERTIFICAT DE SÉCURITÉ / SAFETY CERTIFICATION  
 SÄKERHETSFÖRESKRIFTER / VEILIGHEIDSCERTIFIKAAT

**CAUTION—INVISIBLE LASER RADIATION WHEN PANEL OPEN AND INTERLOCK OVERRIDDEN.**  
 1316-4159-40000 Avoid exposure to beam.

FOR AUS

**Laser Diode Properties**  
 Material: Ga-Al-As  
 Wavelength: 755-815 nm (25°C)  
 Laser Output: Continuous Wave max. 0.7mW



**CAUTION—INVISIBLE LASER RADIATION WHEN PANEL OPEN AND INTERLOCK OVERRIDDEN.**  
**AVOID EXPOSURE TO BEAM**

FOR UK

**CLASS 1 LASER PRODUCT**

CAUTION INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED AVOID EXPOSURE TO BEAM  
 VORSICHT! UNSICHTBARE LASERSTRAHLUNG TRITT AUS WENN DECKEL GEÖFFNET UND WENN SICHERHEITVERRIEGELUNG ÜBERBRÜCKT IST NICHT DEM STRAHL AUSSETZEN!  
 VARNING OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRR ÄR URKOPPLAD STRÅLEN ÄR FARLIG.  
 ADVARSEL USYNLIG LASERSTRÅLING VED ÅBNING NÄR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION UNDGÅ UDSÆTTELSE FOR STRÅLING

FOR EUR

**CAUTION—** THIS PRODUCT CONTAINS A LOW POWER LASER DEVICE. TO ENSURE CONTINUED SAFETY DO NOT REMOVE ANY COVERS OR ATTEMPT TO GAIN ACCESS TO THE INSIDE OF THE PRODUCT. REFER ALL SERVICING TO QUALIFIED PERSONNEL.

**ACHTUNG—** WENN ANDERE ALS DIE HIER BESCHRIEBENEN BEDIENUNGS-ODER JUSTIEREINRICHTUNGEN BENÜTZT ODER ANDERE ARBEITEN AUSGEFÜHRT WERDEN, KANN DIES ZU GEFÄHRLICHER STRAHLUNGSEINWIRKUNG FÜHREN.

**ATTENTION—** L'EMPLOI D'ORGANES DE COMMANDE OU DE RÉGLAGE, OU L'EXÉCUTION DE PROCÉDURES, AUTRES QUE CEUX SPÉCIFIÉS DANS LE MODE D'EMPLOI, PEUT PROVOQUER UNE EXPOSITION DANGEREUSE AU RAYONNEMENT.

**CAUTION—** USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

**VARNING—** BRUK AV KONTROLLER, JUSTERINGAR ELLER MANÖVRERING AV APPARATEN ANNAT ÄN HÄRI ANGIVNA KAN INNEBÄRA STRÅLNINGSRISK.

**OPGELET—** HET GEBRUIK VAN REGELAARS OF HET MAKEN VAN AFSTELLINGEN E.D. DIE NIET IN DEZE GEBRUIKSAANWIJZING ZIJN BESCHREVEN KAN LEIDEN TOT SCHADELIJKE STRALINGEN.

**CAUTELA—** L'USO DI COMANDI, AGGIUSTAMENTI O PROCEDIMENTI DIVERSO DA QUELLO QUI SPECIFICATO PUÒ DAR LUOGO AD ESPOSIZIONE A RADIAZIONI PERICOLOSE.

# SPECIFICATIONS

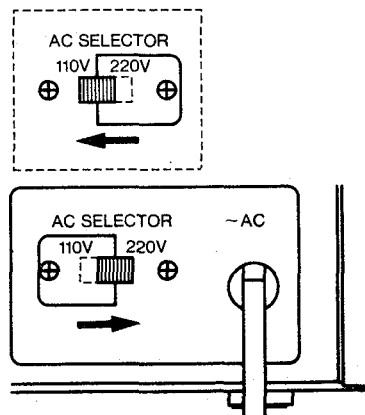
<b>System</b>	Compact disc digital audio system
<b>AUDIO CHARACTERISTICS</b>	
<b>Frequency Response</b>	20Hz-18kHz, $\pm 1$ dB
<b>Harmonic Distortion</b>	Less than 0.07% (1kHz)
<b>S/N Ratio</b>	More than 80dB
<b>Wow and Flutter</b>	Quartz precision
<b>Channel Separation</b>	More than 75dB (1kHz)
<b>Output Voltage max.</b>	2Vrms
<b>FUNCTIONS</b>	
<b>Instant Program Selection</b>	Sequential, with MUSIC SKIP ▶▶ and ◀◀ buttons
<b>Index</b>	Sequential, with SEARCH/INDEX ▶▶ and SEARCH/INDEX ◀◀ buttons (Stop mode only)
<b>Forward/back</b>	Forward/back with sound
<b>Program Functions</b>	16 selections
<b>Repeat</b>	All selections all programmed selections

<b>Reset</b>	Press STOP button
<b>Pause</b>	Each selection
<b>Disc Loading</b>	Motor driven horizontal loading
<b>DIGITAL SIGNAL PROCESSING</b>	
<b>Optical Pickup</b>	3-beam laser
<b>Error Correction</b>	CIRC
<b>Sampling Frequency</b>	44.1kHz
<b>D/A Conversion</b>	16-bit linear
<b>Filter</b>	Digital filter + (4-pole LC filter)
<b>GENERAL</b>	
<b>Power Source</b>	120V, 60Hz (CND) (TCA) 220V, 50Hz (EUR) 240V, 50Hz (AUS) (UK) 110/220V, 50/60Hz (EX)
<b>Power Consumption</b>	9 Watts
<b>Dimensions (W×H×D)</b>	435×90×290mm
<b>Weight</b>	3.4kg

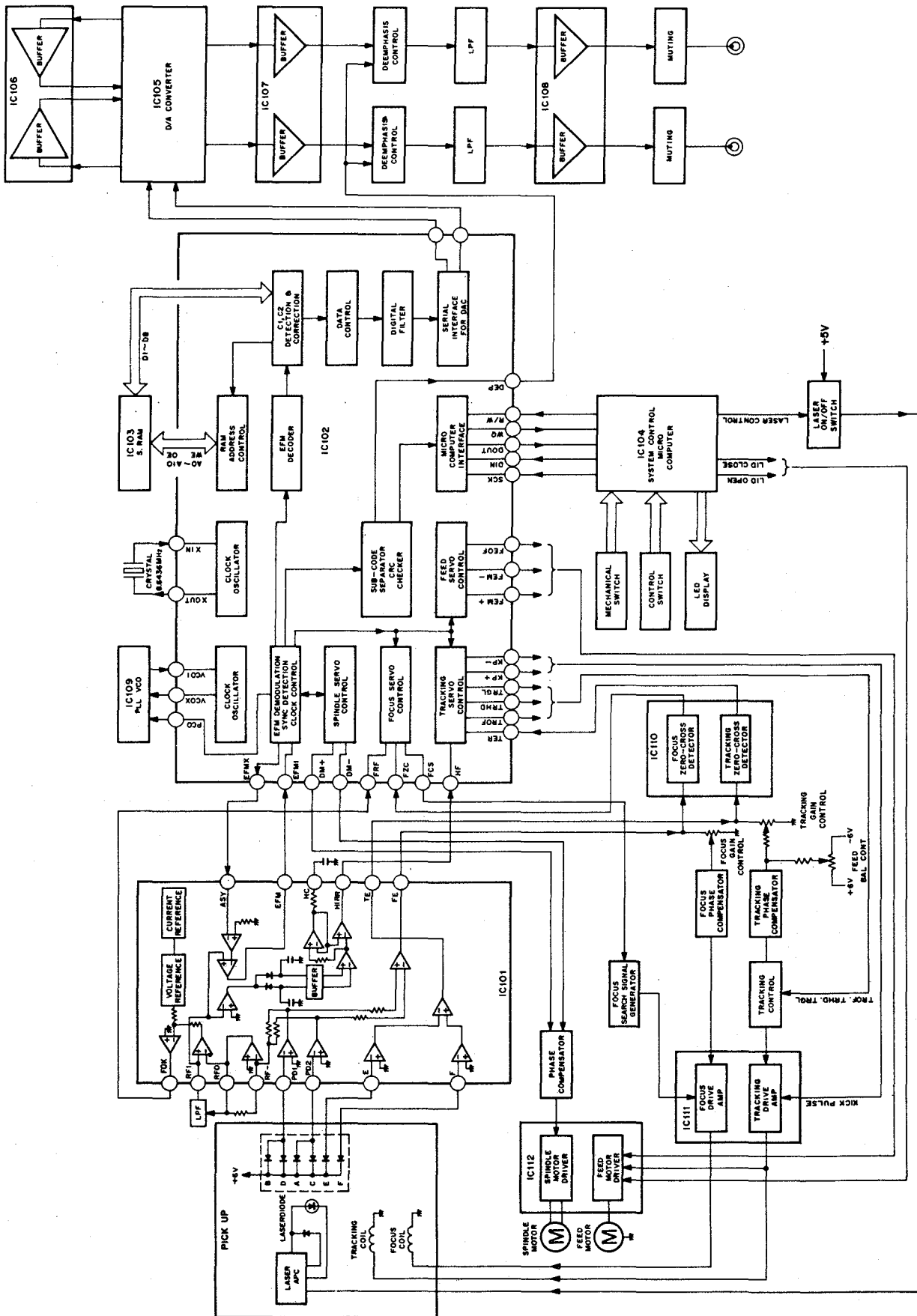
## Voltage Conversion (General export models only)

This unit is adjusted to operate at the electric voltage specified on the unit or packing carton. It is necessary to change the voltage requirements of the PD-155 to match your area, use the following procedures.

1. Disconnect the power cord from AC outlet.
2. Locate the voltage selector (AC SELECTOR) on the rear panel of the unit as shown in the illustration.
3. Remove the screw together with the plate then slide the switch to voltage requirement of your area.



# FUNCTIONAL BLOCK DIAGRAM



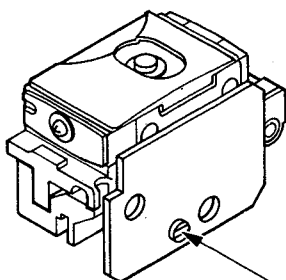
## ADJUSTMENT PROCEDURES

**CAUTION:**

Avoid eye exposure to invisible laser beam which is emitted from laser pickup.

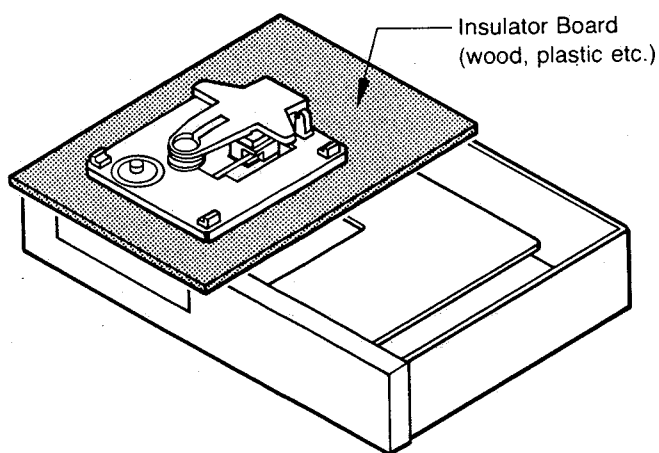
### PRECAUTIONS REGARDING ADJUSTMENT

- Adjustment is performed in the indicated order.
- When adjustment is made for one item, check the other items which follow.
- The laser pick-up has already been precisely adjusted. Do not touch its mounting screws or controls.



Do not adjust

- When the diffraction grid is adjusted, remove the mechanism. It is convenient to place an insulating panel on top of the chassis, and then to place the mechanism on top of this. (The wires are connected.)



Insulator Board  
(wood, plastic etc.)

- Refer to the adjustment diagram for the test points and adjustment controls.
- The ground point for the measurement equipment is the test point indicated as **GND**.

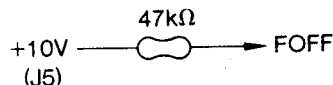
### REQUIRED EQUIPMENTS

- DC Voltmeter
- Dualtrace Oscilloscope
- Frequency Counter
- Signal Generator
- Plastic Screwdriver
- Diffraction Grating Adjustment Jig
- Test Disc (SONY:YEDS4)

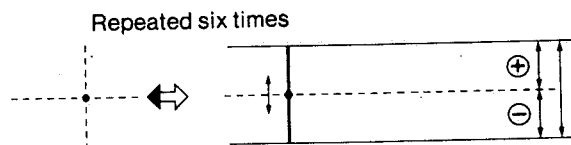
### CHECKING FOCUS ERROR SIGNAL

Checking the focus error signal of the pick-up allows for an evaluation of the pick-up. Be sure this is carried out before repair.

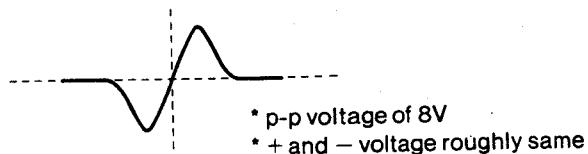
1. Turn on the power and set the unit to the STOP mode.
2. Connect an oscilloscope between test pin **FE** (TP07) and test pin **GND**. (Set the time axis to 0.5 seconds/division.)
3. Connect the +10V supply voltage to test pin **FOFF** (TP08) through a 47kΩ resistor.



4. Press the OPEN/CLOSE button and place the test disk YEDS4 on the table load. Press the OPEN/CLOSE button again.
5. The waveform shown below is displayed six times on the oscilloscope when the table load closes. Check that the p-p voltage is about 8V and that the top and bottom of the waveform are symmetrical.



(When recorded on a memory scope)



- The waveform appears again if the OPEN/CLOSE button is pressed again. This allows for confirmation to be made. The pick-up is faulty if confirmation cannot be made.

**SETTING OF INITIAL POSITION OF VOLUME**

- The variable resistors are set to the following initial positions.

P101 (E-F BALANCE)	.....	Mechanical center
P102 (FOCUS OFFSET)	.....	Mechanical center
P103 (TRACKING OFFSET)	.....	Mechanical center
P104 (TRACKING GAIN)	.....	Mechanical center
P105 (FOCUS GAIN)	.....	Mechanical center

**FREE RUN FREQUENCY ADJUSTMENT**

- Turn on the power and set the unit to the STOP mode.
- Short boss terminals of C114. Connect the frequency counter between test pin **VCO** and test pin **GND** (use probes).
- Rotate the core of the PLL OSC coil (T102) with a plastic screwdriver so that the frequency counter indicates 4.3218MHz.

**FOCUS OFFSET ADJUSTMENT**

- Turn on the power and set the unit to the STOP mode.
- Connect a DC voltmeter and oscilloscope between test pin **TP07 (FE)** and test pin **GND**.
- Adjust P102 so that the indication on the DC voltmeter and oscilloscope is  $0V \pm 10mV$ .

**TRACKING OFFSET ADJUSTMENT**

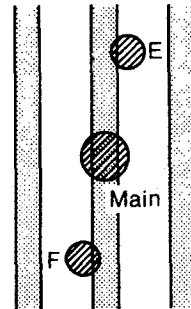
- Turn on the power and set the unit to the STOP mode.
- Connect a DC voltmeter and oscilloscope between test point **T-COIL (TC)** and test pin **GND**.
- Adjust P103 so that the indication on the DC voltmeter and oscilloscope is  $0V \pm 50mV$ .

**NOTE:**

This adjustment should be made again after the adjustment of Tracking Gain.

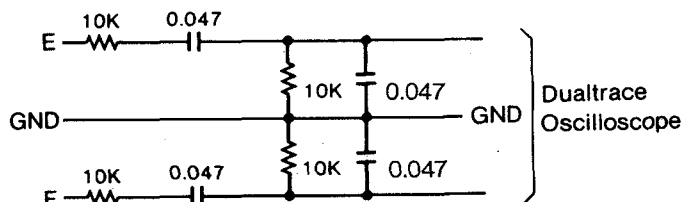
**OBSERVATION OF DIFFRACTION GRID**

This unit uses a three beam method for the laser pick-up. The position of the E and F beams of provided pick-up is adjusted in relation to the main beam so that they are in the same line.



The following is the observation procedure. Carefully check when pick-up is replaced.

- Turn on the power, place test disk YEDS4 on the table load and set the unit to the STOP mode.
- Short test pins **TP17** and **TP18**.
- Short test pin **TOFF (TP05)** and test pin **GND**. Pass test pins **E (TP3)** and **F (TP2)** through the band pass filter, and connect to the channels of the dualtrace oscilloscope. The ground is obtained from test point **GND**.



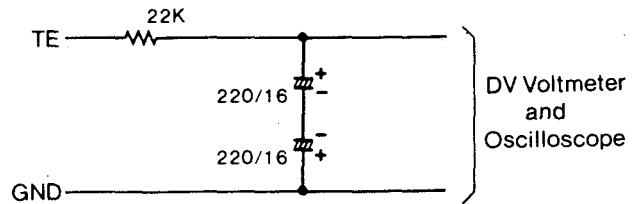
- Press the **START** button to start the test disc YEDS 4 rotation. (The unit becomes Test Mode.)
- Observe the resurge waveform of the waveform indicated on the oscilloscope.



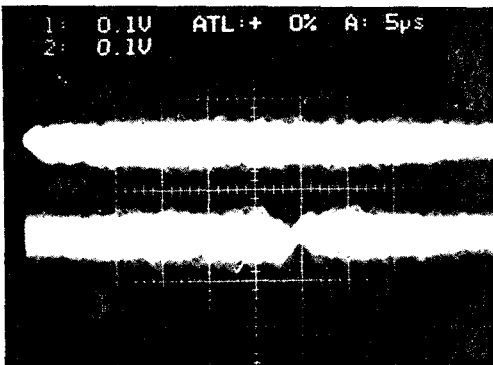
**E-F BALANCE ADJUSTMENT**

1. Turn on the power and mount test disk YEDS4 on the table load. Set the unit to the STOP mode.
2. Short test pins **TP17** and **TP18**.
3. Short test pin **TOFF** (TP05) and test pin **GND**, and connect a DC voltmeter and oscilloscope to test pin **TE** (TP04) through the low-pass filter shown below.

6. Remove the short between test pin **TOFF** (TP05) and **GND**, and **TP17** and **TP18**, and play back the fourth selection on YEDS4.
7. Observe the waveform of the signal between test pin **E** and test pin **F** using the dualtrace oscilloscope (Monitored in ALT mode). The beam **E** and beam **F** are in the same pit line if the trigger of waveform **F** is approximately  $30\mu s$  behind the point (Position where waveform hollows out) where the waveform **E** is triggered.



4. Press the PLAY button. The disk begins to rotate. The unit is rotating in this state with the tracking servo turned off.
5. Adjust P101 so that the DC voltmeter and oscilloscope is  $0V \pm 50mV$ .



The two beam are on the same pit line.  
(100mV/DIV : 5µSec/DIV)

**CONFIRMING JITTER**

This procedure can be omitted in the case that no jitter counter is equipped.

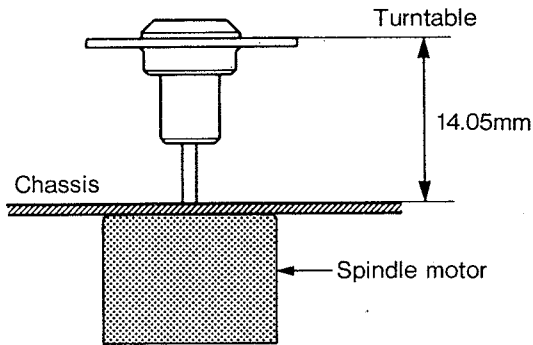
1. Turn on the power and mount test disc YEDS4 on the table load, and play the fourth program of the YEDS4.
2. Connecting the jitter counter to the test point **EFM**, make sure that the value of 3T is less than 25nSec.
3. In the case of 25nSec or more, adjust P102.

When observation of the waveform is difficult, the trigger level can be varied.

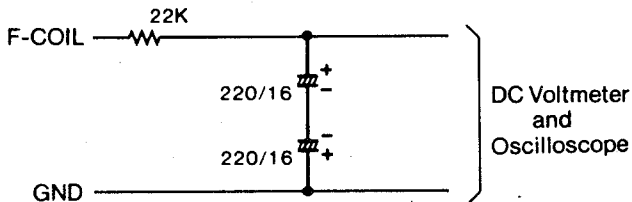
**ADJUSTMENT OF TURNTABLE HEIGHT**

This adjustment must be made when the motor is replaced.

1. Attach the turntable so that its top surface is 14.05mm from the top of the chassis.



2. Connect test pin **F-COIL** (FC) to a DC voltmeter and oscilloscope through the low-pass filter.



3. Turn on the power and playback the first selection on test disk YEDS4.
4. Readjust the height of the turntable if the reading on the DC voltmeter is not in the range of  $0V \pm 0.35V$ . (Increase the height of the turntable when the voltmeter reading is positive, and decrease it when negative.)

**ADJUSTMENT OF FOCUS/TRACKING GAIN**

The measurement circuit shown the next page is necessary for accurate adjustment of the focus and tracking gain. If this circuit cannot be made, make adjustments using the simplified procedure.

**Simplified adjustment procedure**

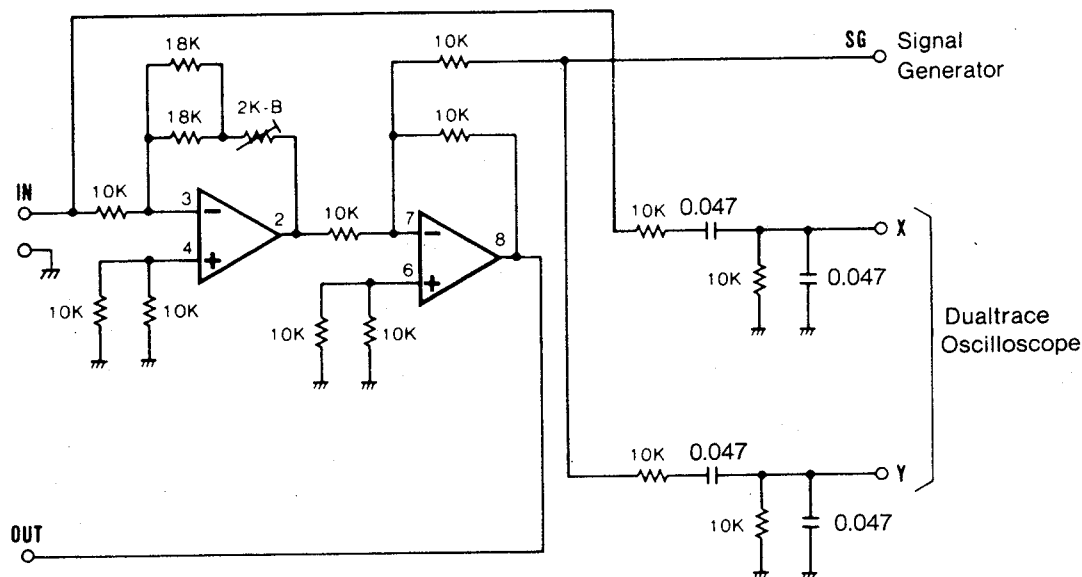
- Focus gain adjustment  
P105 is set to a position  $15^\circ$  from its mechanical center as shown in the diagram below.



- Tracking gain adjustment  
P104 is set to a position  $15^\circ$  from its mechanical center as shown in the diagram below.







- The IC used is TA7256P
- VR control 2k $\Omega$ -B shorts **IN** and **SG**. 1kHz 1Vp-p is supplied from the signal generator, and adjustment is made for minimum output from **OUT**.

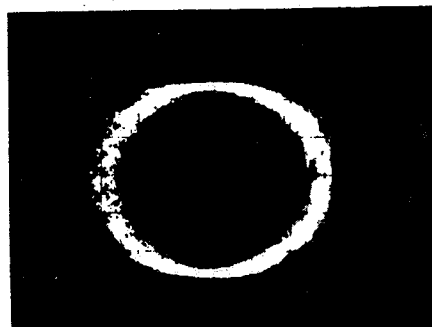
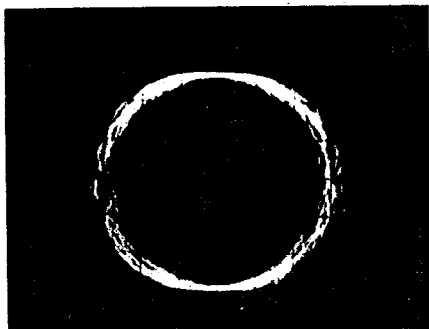
**Precise adjustment procedure**

• Focus gain adjustment

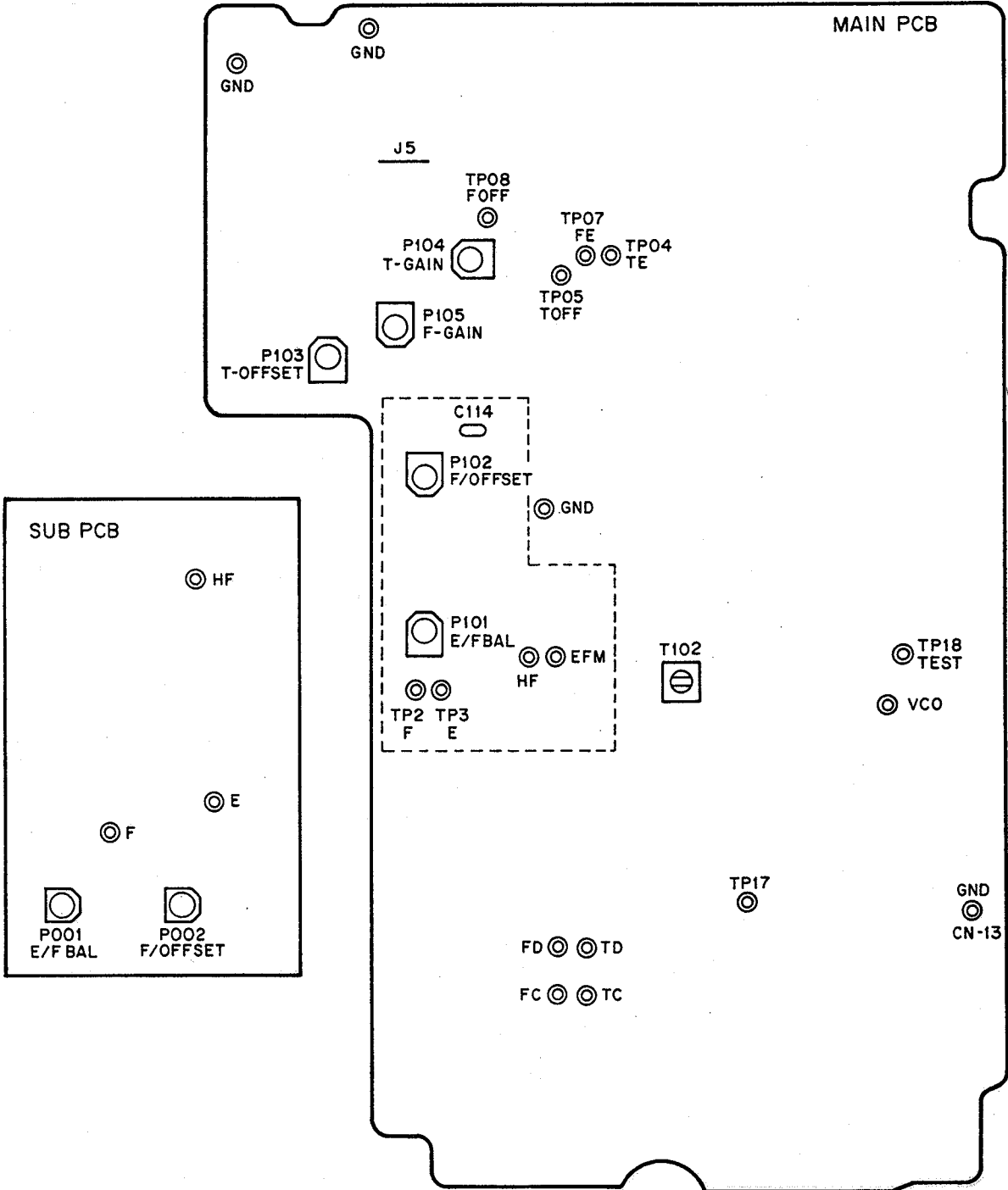
1. Remove the short between test pin **FD** and **FC**, then connect input terminal of the measurement circuit to test pin **FD**, output terminal to test pin **FC** and **GND** to **GND**.
2. Turn on the power, and mount the test disk YEDS4.
3. Playback the first selection on the test disk, and apply a 1,100Hz 0.5Vp-p signal from the signal generator.
4. Observe the resurge waveforms on the oscilloscope, and adjust P105 so that the phase difference of outputs **X** and **Y** from the measurement circuit is 90°.

• Tracking gain adjustment

1. Remove the short between test pin **TD** and **TC**, then connect input terminal of the measurement circuit to test pin **TD**, output terminal to test pin **TC** and **GND** to **GND**.
2. Turn on the power, and mount the test disk YEDS4, and playback the first selection on the disk. The input from the frequency generator is set to 1,200Hz, 0.5Vp-p, and P104 is adjusted so that the phase difference is 90°.



# P.C.BOARD ALIGNMENT POINTS



## SAFETY INTERLOCK

The Digital Compact Disc Player reads the disc signal by detecting the laser beam. It must be avoided for the human body to directly receive the beam. Especially human eyes are badly affected by the beam. Therefore, the unit is equipped with an interlock to prevent the unnecessary laser outputs.

The laser outputs are controlled by the injection or cutoff of the constant voltage source to the laser diode with Pin 23 of IC 104 (LC6523H). When Pin 23 is in "L" (Low) level, the laser emits the beam. When Pin 23 is in "H" (High) level, the laser does not emit the beam.

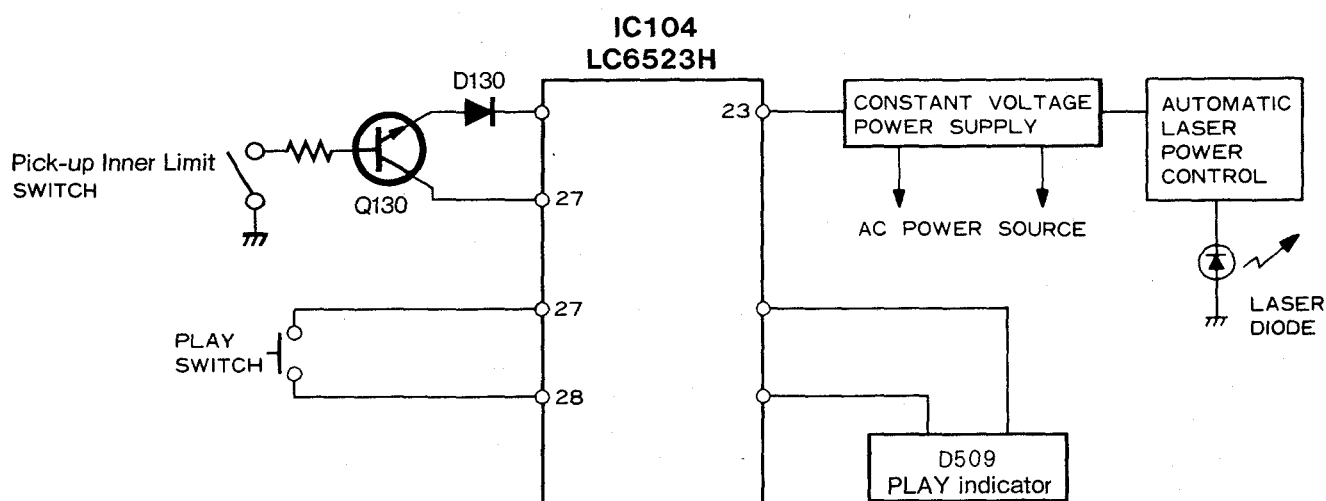
Pin 23 is set in "H" level when the unit is loaded with the disc and it reads the index signals or when the unit is set in the play mode after that. When the unit reads the index signals and the

following two conditions are met, the laser emits the beam.

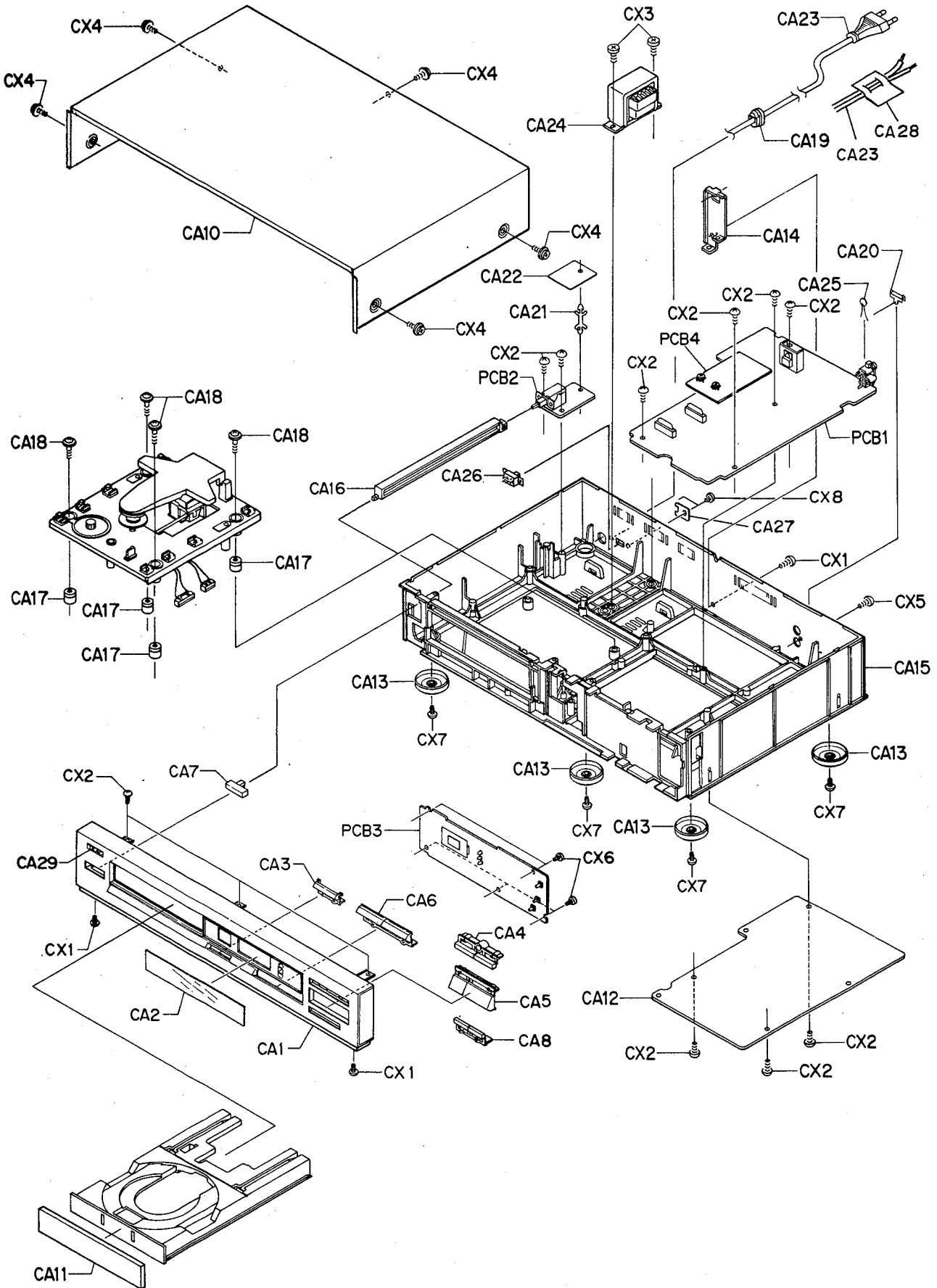
- 1) When the Pick-up Inner Limit Switch is on. (The disc tray is closed.)
- 2) The pickup is located at the area of the minimum internal circumference.

After the above conditions are met and the index signals have been read, the laser emits the beam when the following two conditions are met.

- 1) When the PLAY button is pressed.
- 2) When the PLAY indicator is on.



# CABINET EXPLODED VIEW



# CABINET PARTS LIST

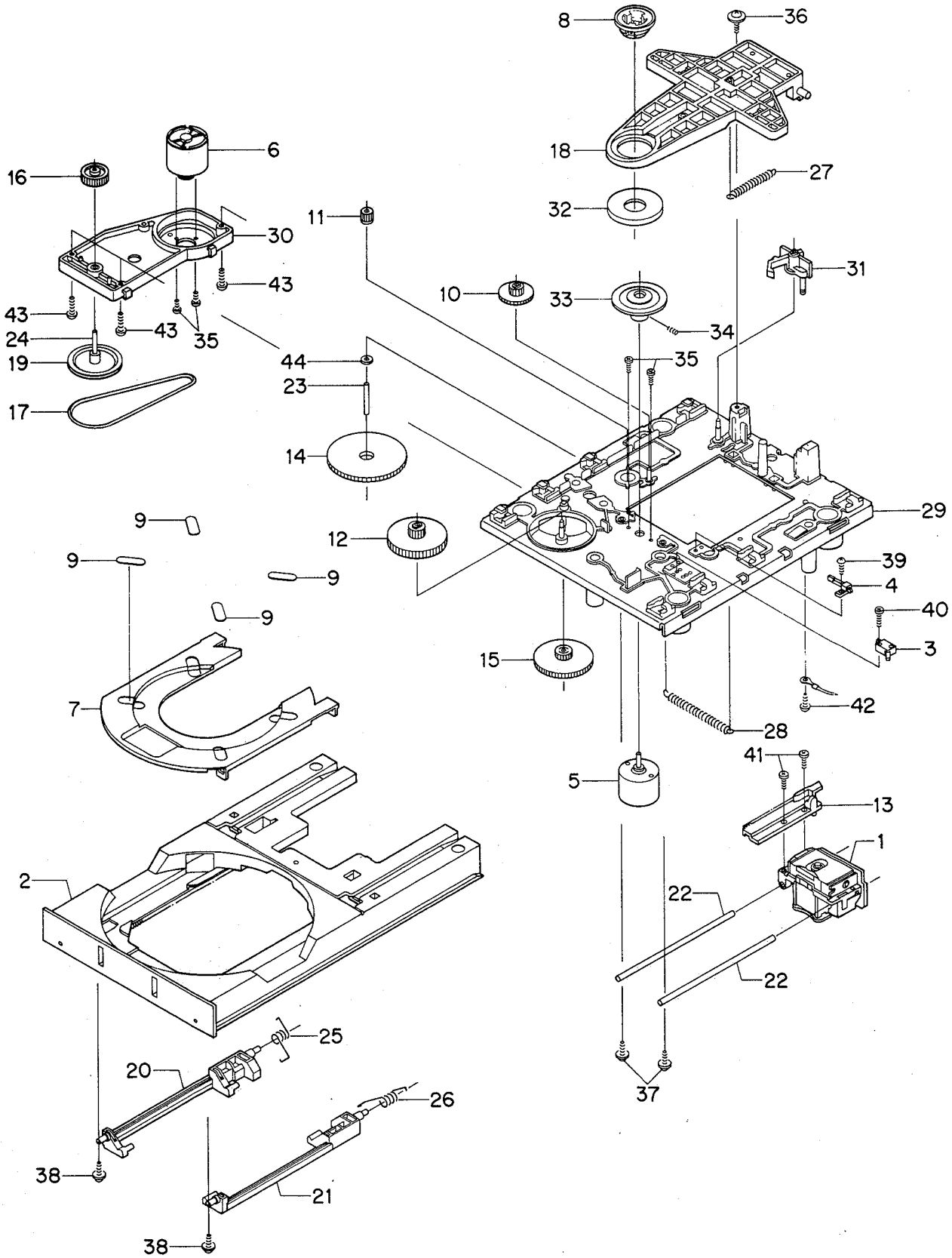
EXPLODED VIEW (CABINET & CHASSIS)

REF.NO.	PARTS NO.	DESCRIPTION	REMARKS
CA- 1	*9A01033100	FRONT PANEL	
CA- 2	*9A01034000	DECORATE PLATE DIAL	
CA- 3	9A01033800	KNOB EJECT	
CA- 4	9A01033600	KNOB SEARCH	
CA- 5	9A01033400	KNOB PLAY	
CA- 6	9A01033500	KNOB REPEAT	
CA- 7	9A01033300	KNOB POWER	
CA- 8	9A01033700	KNOB SKIP	
CA- 9	*9A01033200	COVER DECORATE	
CA-10	*9A00179200	COVER TOP	
CA-11	*9A01033900	COVER DECORATE	
CA-12	*9A00169900	PLATE BOTTOM	
CA-13	*9A01034700	LEG (FRONT)	
	*9A01035000	LEG (REAR)	
CA-14	*9A00170200	METAL MOUNT COVER	
CA-15	*9A01034400	CHASSIS MAIN [US,C,E,UK,A]	
	*9A01047300	CHASSIS MAIN [GE]	
CA-16	*9A01034500	SHAFT (POWER SWITCH)	
CA-17	*9A01034600	CUSHION RUBBER	
CA-18	*9A01034300	SHAFT (MECHA CRAMP)	
CA-19	Δ*9A00149600	BUSHING [US,C,GE]	
	Δ*9A00182200	BUSHING [E,UK,A]	
CA-20	*9A00769700	LUG GROUND [US,C,E]	
CA-21	*9A00182500	MOUNT PCB [A]	
CA-22	*9A00182600	SHEET [A]	
CA-23	Δ*5761246800	POWER CORD [GE]	
	Δ*9A00443300	POWER CORD [E]	
	Δ*9A00767400	POWER CORD [US,C]	
	Δ*9A00770100	POWER CORD [A]	
	Δ*9A01047100	POWER CORD [UK]	
CA-24	Δ 9A00178000	POWER TRANS [C]	
	Δ 9A00181800	POWER TRANS [GE]	
	Δ 9A00182400	POWER TRANS [UK]	
	Δ 9A00769600	POWER TRANS [E]	
	Δ 9A00770200	POWER TRANS [A]	
	Δ 9A01035100	POWER TRANS [US]	
CA-25	9A00822100	C. CERAMIC 0.022MF/50V [US,C,E]	
CA-26	Δ 9A00181700	SWITCH SLIDE 3P [GE]	
CA-27	*9A00181500	PLATE PAD SWITCH [GE]	
CA-28	*9A01046600	BS CORD LABEL [UK]	
CA-29	*5720175500	TEAC EMBLEM	
PCB1	*9A01042500	MAIN PCB ASSY [US,C]	Ref. Pages 17 & 19
	*9A01042510	MAIN PCB ASSY [E,A,GE]	Ref. Pages 17 & 19
	*9A01042520	MAIN PCB ASSY [UK]	Ref. Pages 17 & 19
	*9A01168400	MAIN PCB ASSY (OR) [US,C]	Ref. Pages 18 & 20
	*9A01168410	MAIN PCB ASSY (OR) [E,A,GE]	Ref. Pages 18 & 20
	*9A01168430	MAIN PCB ASSY (OR) [UK]	Ref. Pages 18 & 20
PCB2	*9A01042600	POWER PCB ASSY	Ref. Pages 16 & 19
PCB3	*9A01042700	CONTROL PCB ASSY	Ref. Pages 16 & 19
PCB4	*9A01168500	SUB PCB ASSY	Ref. Pages 16 & 20
CX1	*9A00767100	SCREW S-TPG BRZ M3X8	
CX2	*9A00766700	SCREW S-TPG BRZ M3X8	
CX3	*9A00767000	SCREW S-TPG BIN M4X10	
CX4	*9A01041200	SCREW S-TPG BIN M3X8	
CX5	*9A00767200	SCREW S-TPG BRZ M3X10	
CX6	*9A00989300	SCREW S-TPG BRZ M2.6X6	
CX7	*9A00997600	SCREW S-TPG BRZ M3X10	
CX8	*9A00821300	SCREW PAN M3X8 [GE]	

[US]:U.S.A. [C]:CANADA [GE]:GENERAL EXPORT  
[E]:EUROPE [UK]:U.K. [A]:AUSTRALIA

Parts marked with \*require longer delivery time.

# MECHANISM EXPLODED VIEW



## MECHANISM PARTS LIST

EXPLODED VIEW (MECHANISM)

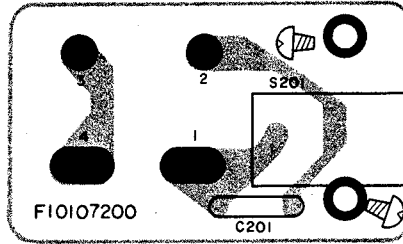
REF.NO.	PARTS NO.	DESCRIPTION	REMARKS
1	9A01035800	PICK-UP ASSY 88	
2	9A01036100	TABLE LOAD	
3	9A01036200	LEVER SWITCH IPIT	
4	9A00171900	LEAF SWITCH	
5	9A01036300	SPINDLE MOTOR	
6	9A01036400	MOTOR	
7	*9A01036500	TABLE CD	
8	*9A01036600	HOLDER DISK	
9	*9A01036700	PAD DISK (FELT)	
10	9A01036800	GEAR PICK-UP	
11	9A01036900	GEAR MOTOR	
12	9A01037000	GEAR TABLE LOAD	
13	9A01037100	GEAR PICK-UP RACK	
14	9A01037200	GEAR LOAD PICK-UP	
15	9A01037300	GEAR LOAD T. L	
16	9A01037400	GEAR	
17	9A01037500	BELT	
18	*9A01037600	FLAP DISK CRAMP	
19	9A01037700	PULLEY	
20	*9A01037800	LEVER HOLD DISK L	
21	*9A01037900	LEVER HOLD DISK R	
22	*9A01038000	SHAFT PICK-UP	
23	*9A01038100	SHAFT GEAR S	
24	*9A01038200	SHAFT PULLEY	
25	*9A01038300	SPRING LEVER LEFT	
26	*9A01038400	SPRING LEVER RIGHT	
27	*9A01038500	SPRING FLAP DISK CR	
28	*9A01038600	SPRING ARM	
29	*9A01038700	CHASSIS ASSY	
30	*9A01039100	CHASSIS SUB ASSY	
31	*9A01039400	ARM ASSY	
32	*9A01039600	MAGNET ASSY	
33	9A01040300	TURNTABLE	
34	*9A00173700	SET SCREW V-CONE 2X4	
35	*9A01040400	SCREW PAN PCS M1.7X3	
36	*5760707700	SCREW (B TITE SEMS) Z	
37	*9A00173800	SCREW WASHER	
38	*9A00172200	SCREW (B TITE SEMS)	
39	*9A01040500	SCREW S-TPG PAN M2X6	
40	*9A01040600	SCREW TPG PAN M1.7X10	
41	*9A01040700	SCREW FLT PCS M2X5	
42	*9A00991000	SCREW S-TPG BRZ M3X6	
43	*9A01040900	SCREW S-TPG BRZ M2.6X14	
44	*9A01040200	WASHER	

INCLUDED ACCESORIES

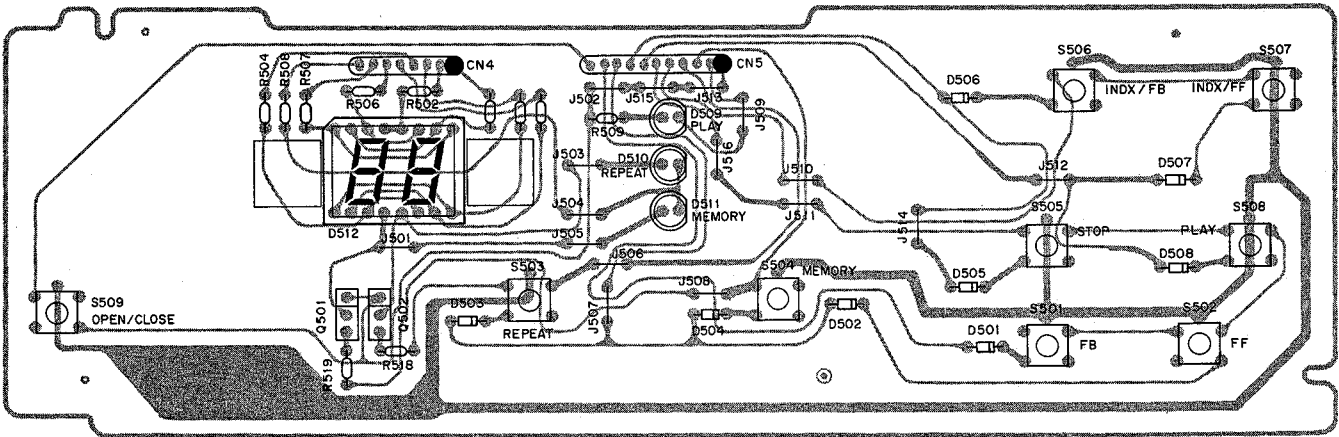
REF.NO.	PARTS NO.	DESCRIPTION	REMARKS
	*9A01030900	OPERATION MANUAL (PD-155)	
	*9A00768900	PLUG CORD	

Parts marked with \*require longer delivery time.

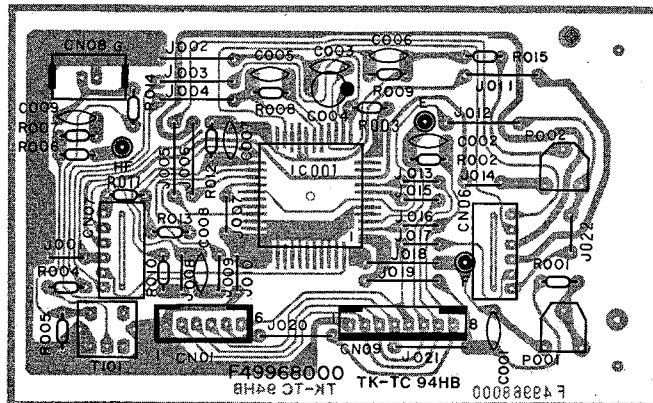
### POWER SWITCH P.C.BOARD (TOP VIEW)



### CONTROL P.C.BOARD (TOP VIEW)

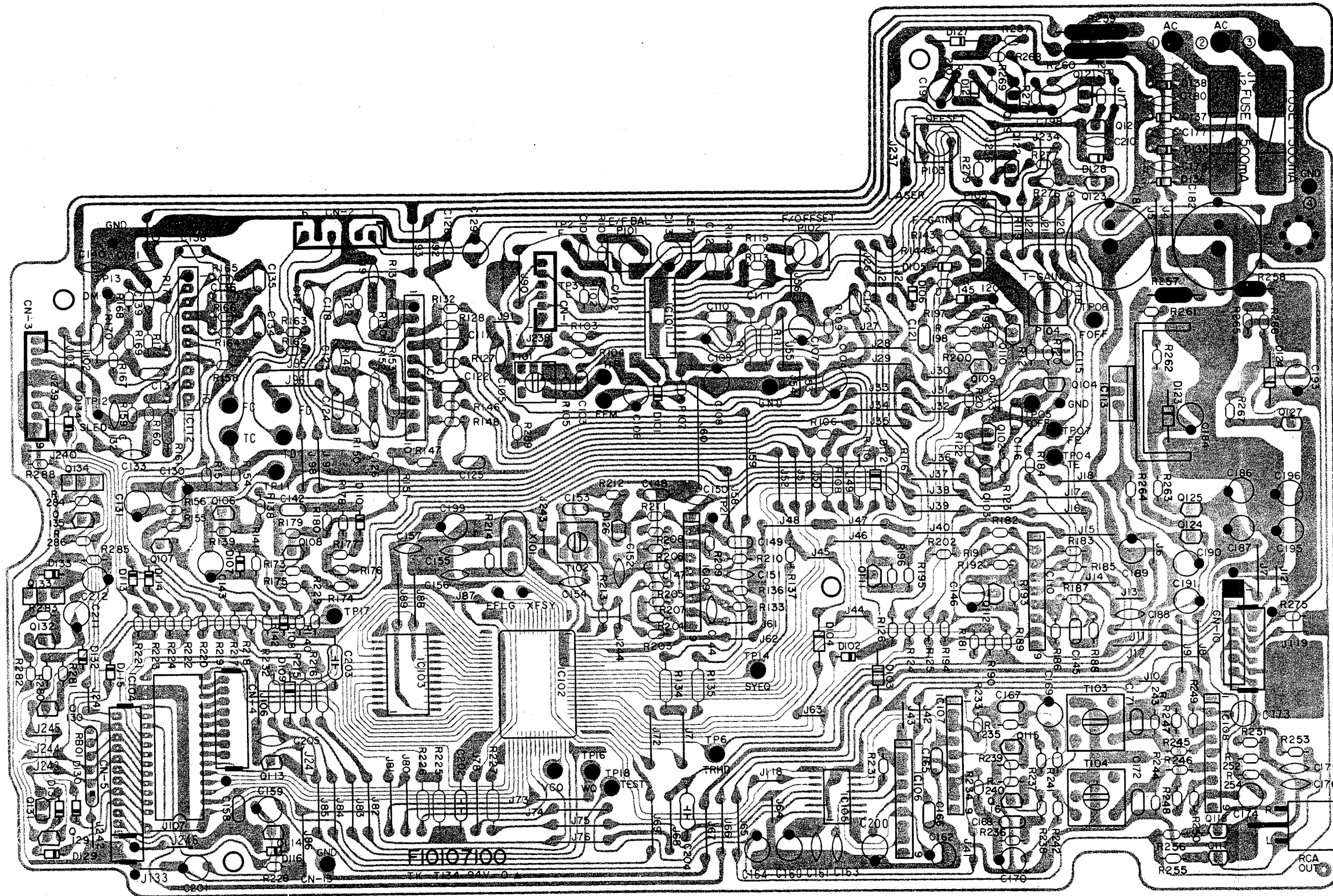


### SUB P.C.BOARD (TOP VIEW)

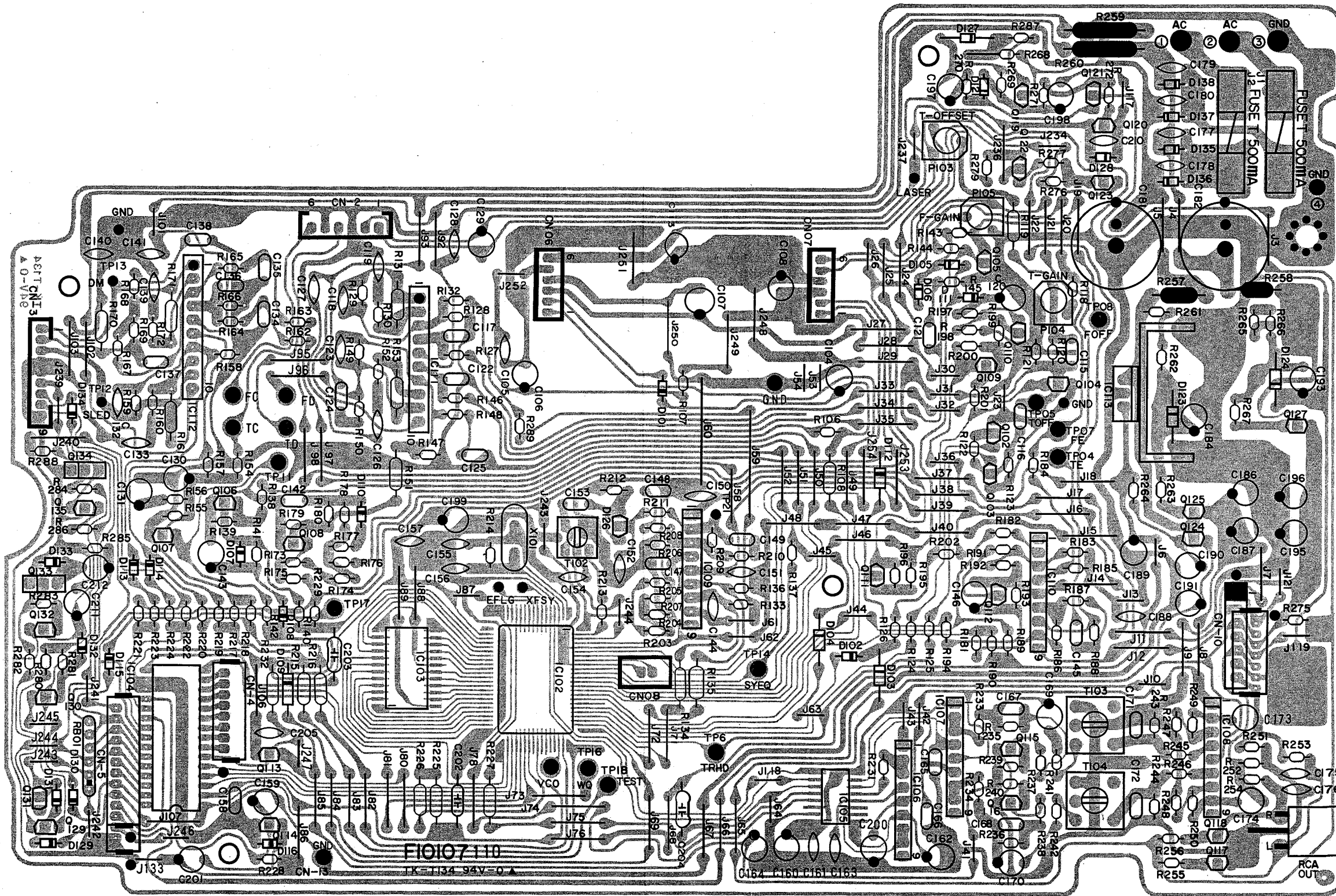




# MAIN P.C.BOARD (TOP VIEW)



# MAIN P.C.BOARD (OR) (TOP VIEW)



## P.C.BOARD PARTS LIST

**NOTES:**

1. As regards the resistors and capacitors, refer to the circuit diagrams contained in this manual.
2. Parts marked with Δ this sign are safety critical components. They must always be replaced with identical components—refer to the appropriate parts list and ensure exact replacement.

**MAIN PCB ASSY**

REF.NO.	PARTS NO.	DESCRIPTION
	*9A01042500	MAIN PCB ASSY [US,C]
	*9A01042510	MAIN PCB ASSY [E,A,GE]
	*9A01042520	MAIN PCB ASSY [UK]
	*9A01042800	MAIN PCB
D101, 102	9A01043400	DIODE ISS254
D103, 104	9A01043400	DIODE ISS254
D105-108	9A01043400	DIODE ISS254
D109, 112	9A01043400	DIODE ISS254
D110, 111	9A01043400	DIODE ISS254
D113-116	9A01043400	DIODE ISS254
D121	9A01043400	DIODE ISS254
D123, 124	9A01043500	ZENER DIODE GZA6.8X BT
D126	9A00775000	VARACTOR SVC211SP
D127	9A01043600	ZENER DIODE GZA7.5X BT
D128-134	9A01043400	DIODE ISS254
D135-138	9A00775300	DIODE MPG06B-G3
IC101	9A00993200	IC CX20109
IC102	9A00775700	IC YM3805
IC103	9A00776100	IC CXK5816M-15L
IC104	9A00775800	IC LC6523H-3043
IC105	9A00776000	IC YM3015
IC106-109	9A00775900	IC NJM2068S-D
IC110	9A00993300	IC LA6393S
IC111, 112	9A00776800	IC TA7256P
IC113	9A00776900	IC L78M05
Q102-105	9A00777500	TRANSISTOR 2SC536-F-NP
Q106, 108	9A00777500	TRANSISTOR 2SC536-F-NP
Q107	9A00777500	TRANSISTOR 2SC536-F-NP
Q109, 111	9A00777800	TRANSISTOR 2SA608E/NP
Q110, 112	9A00777500	TRANSISTOR 2SC536-F-NP
Q113, 114	9A01044200	D. TRANSISTOR DTC124-S-TP
Q115, 116	9A00777500	TRANSISTOR 2SC536-F-NP
Q117-119	9A00777500	TRANSISTOR 2SC536-F-NP
Q120	9A01044200	D. TRANSISTOR DTC124-S-TP
Q121, 122	9A00777800	TRANSISTOR 2SA608E/NP
Q123	9A00777800	TRANSISTOR 2SA608E/NP
Q124	9A00778000	TRANSISTOR 2SD612E
Q125	9A00994700	TRANSISTOR 2SD734-E-K
Q127	9A00995000	TRANSISTOR 2SB698-E
Q129-132	9A00777800	TR., 2SA608E/NP
Q133, 134	9A01044200	D. TRANSISTOR DTC124-S-TP
Q135	9A00777800	TRANSISTOR 2SA608E/NP
P101, 102	9A00777400	POTENTIOMETER 100K (B)
P103	9A00777300	POTENTIOMETER 20K (B)
P104, 105	9A00993600	POTENTIOMETER 10K (B)
R257-260	9A01044300	R. FUSIBLE 5.6 1/4W J
T101	9A00191200	RF FILTER
T102	9A00191500	OSC COIL
T103, 104	9A00779100	AF FILTER
X101	9A00198000	CRYSTAL

**MAIN PCB ASSY**

REF.NO.	PARTS NO.	DESCRIPTION
CN 1	9A00188000	PLUG 6P
CN 2	9A01043000	PLUG 6P
CN 3	9A01043100	PLUG 9P
CN 4	9A01043200	PLUG 8P
CN 5	9A01043300	PLUG 11P
RB 1	9A00996200	RM5-103J
	Δ9A00198300	FUSE T 500MA [E,A,GE]
	Δ9A00780000	FUSE T 500MA [UK]
	*9A01046500	FUSE HOLDER [E,UK,A,GE]
	*9A00198400	FUSE CLIP [E,UK,A,GE]
	*5760526600	PLATE HEAT SINK
	*5761259300	WIRE WRAP TERMINAL
	*9A00183000	PIN JACK 2P
	*9A00183100	PIN 1P
	*9A00990800	RT PIN 0.8 X7L

**POWER PCB ASSY**

REF.NO.	PARTS NO.	DESCRIPTION
	*9A01042600	POWER PCB ASSY
	*9A01044500	POWER PCB
C201	Δ9A00201600	CAPACITOR 0.01MF/400V
S201	Δ9A00201500	POWER SWITCH
	*5760663000	EC TERMINAL 1P
	*5761259300	WIRE WRAP TERMINAL

**CONTROL PCB ASSY**

REF.NO.	PARTS NO.	DESCRIPTION
	*9A01042700	CONTROL PCB ASSY
	*9A01044600	CONTROL PCB
D501-508	9A01043400	DIODE ISS254
D509	9A01045500	LED SLR-56YC3F
D510, 511	9A01045600	LED SLR-56DC3F
D512	9A01045700	LED LB402DB
Q501, 502	9A00996800	TRANSISTOR 2SA937-R
S501-509	9A00438700	TACT SWITCH
CN 4	9A01044700	JUMPER 8P
CN 5	9A01044800	JUMPER 11P
	*9A01044900	PAD

[US]:U.S.A. [C]:CANADA [GE]:GENERAL EXPORT  
[E]:EUROPE [UK]:U.K. [A]:AUSTRALIA

Parts marked with \*require longer delivery time.

**MAIN PCB ASSY (OR)**

REF.NO.	PARTS NO.	DESCRIPTION
	*9A01168400	MAIN PCB ASSY (OR) [US,C]
	*9A01168410	MAIN PCB ASSY (OR) [E,A,GE]
	*9A01168430	MAIN PCB ASSY (OR) [UK]
	*9A01169900	MAIN PCB
D101 102	9A01043400	DIODE ISS254
D103,104	9A01043400	DIODE ISS254
D105-108	9A01043400	DIODE ISS254
D109,112	9A01043400	DIODE ISS254
D110,111	9A01043400	DIODE ISS254
D113-116	9A01043400	DIODE ISS254
D121	9A01043400	DIODE ISS254
D123,124	9A01043500	ZENER DIODE GZA6.8X BT
D126	9A00775000	VARACTOR SVC211SP
D127	9A01043600	ZENER DIODE GZA7.5X BT
D128-134	9A01043400	DIODE ISS254
D135-138	9A00775300	DIODE MPG06B-G3
IC102	9A00775700	IC YM3805
IC103	9A00776100	IC CXK5816M-15L
IC104	9A00775800	IC LC6523H-3043
IC105	9A00776000	IC YM3015
IC106-109	9A00775900	IC NJM2068S-D
IC110	9A00993300	IC LA6393S
IC111,112	9A00776800	IC TA7256P
IC113	9A00776900	IC L78M05
Q102	9A00993800	TRANSISTOR 2SC536-F-NPN
Q103-105	9A00777500	TRANSISTOR 2SC536-F-NP
Q106,108	9A00777500	TRANSISTOR 2SC536-F-NP
Q107	9A00777500	TRANSISTOR 2SC536-F-NP
Q109,111	9A00777800	TRANSISTOR 2SA608E/NP
Q110,112	9A00777500	TRANSISTOR 2SC536-F-NP
Q113,114	9A01044200	D. TRANSISTOR DTC124-S-TP
Q115,116	9A00777500	TRANSISTOR 2SC536-F-NP
Q117-119	9A00777500	TRANSISTOR 2SC536-F-NP
Q120	9A01044200	D. TRANSISTOR DTC124-S-TP
Q121,122	9A00777800	TR., 2SA608E/NP
Q123,135	9A00777800	TRANSISTOR 2SA608E/NP
Q124	9A00778000	TRANSISTOR 2SD612E
Q125	9A00994700	TRANSISTOR 2SD734-E-K
Q127	9A00995000	TRANSISTOR 2SB698-E
Q129-132	9A00777800	TR., 2SA608E/NP
Q133,134	9A01044200	D. TRANSISTOR DTC124-S-TP
P103	9A00777300	POTENTIOMETER 20K (B)
P104,105	9A00993600	POTENTIOMETER 10K (B)
R257-260	9A01044300	R. FUSIBLE 5.6 1/4W J
T102	9A00191500	OSC COIL
T103,104	9A00779100	AF FILTER
X101	9A00198000	CRYSTAL
RB 1	9A00996200	RM5-103J
CN 2	9A01043000	PLUG 6P
CN 3	9A01043100	PLUG 9P

**MAIN PCB ASSY (OR)**

REF.NO.	PARTS NO.	DESCRIPTION
CN 4	9A01043200	PLUG 8P
CN 5	9A01043300	PLUG 11P
CN 7, 8	9A01170300	PLUG 6P
CN 9	9A01170400	JUMPER 2P
	Δ 9A00198300	FUSE T 500MA [E,A,GE]
	Δ 9A00780000	FUSE T 500MA [UK]
	*9A01046500	FUSE HOLDER [E,UK,A,GE]
	*9A00198400	FUSE CLIP [E,UK,A,GE]
	*5760526600	PLATE HEAT SINK
	*5761259300	WIRE WRAP TERMINAL
	*9A00183000	PIN JACK 2P
	*9A00183100	PIN 1P
	*9A00990800	RT PIN 0.8 X7L

**NOTES:**

Several parts moves from present Main PCB Assy to the newly made Sub PCB Assy on the following versions.

Serial No. 801795 and after [US]  
 800301 and after [C]  
 801501 and after [GE]  
 801501 and after [E]  
 800201 and after [UK]  
 800001 and after [A]









**SUB PCB ASSY (OR)**

REF.NO.	PARTS NO.	DESCRIPTION
	*9A01168500	SUB PCB ASSY (OR)
	*9A01169200	SUB PCB
IC 1	9A01169800	IC LA9200NM
P 1, 2	9A00777400	POTENTIOMETER 100K (B)
T 1	9A00191200	FILTER RF
CN 1	9A00188000	PLUG 6P
CN 6, 7	9A01169600	SOCKET 6P
CN 8	9A01169700	PLUG 2P
	*9A00990800	RT PIN 0.8 X7L

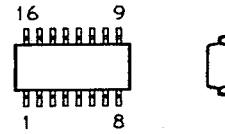
[US]:U.S.A. [C]:CANADA [GE]:GENERAL EXPORT  
 [E]:EUROPE [UK]:U.K. [A]:AUSTRALIA

Parts marked with \*require longer delivery time.

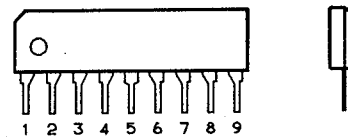
# IC & TRANSISTOR LEAD IDENTIFICATION

TRANSISTOR	FRONT VIEW	BOTTOM VIEW
2SA608 2SB698 2SC536 2SD734		
DTC124		
2SA937		
2SD612		
<b>TERMINAL NAME</b>		
B → BASE C → COLLECTOR E → EMITTER		

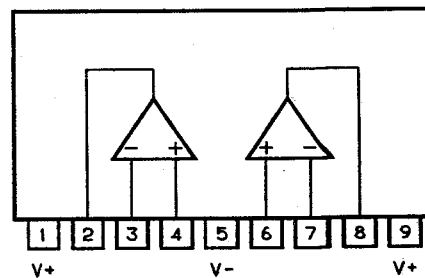
YM3015 TOP/SIDE VIEW



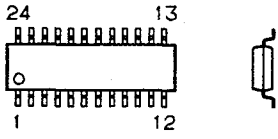
NJM2068/NJM2903S FRONT/SIDE VIEW



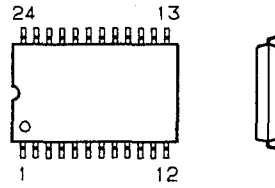
NJM2068/NJM2903S BLOCK DIAGRAM



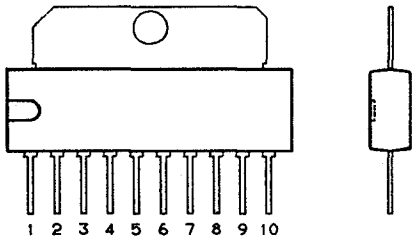
**CX20109 TOP/SIDE VIEW**



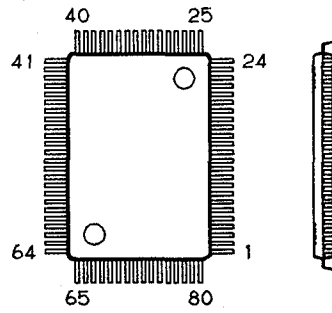
**HM6116 TOP/SIDE VIEW**



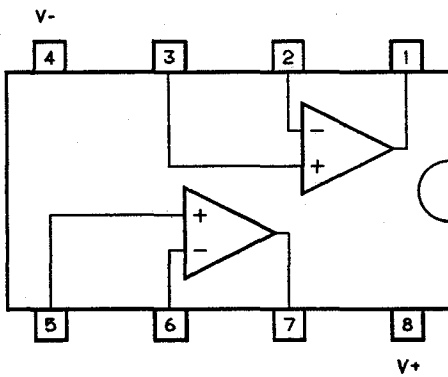
**STA7256P FRONT/SIDE VIEW**



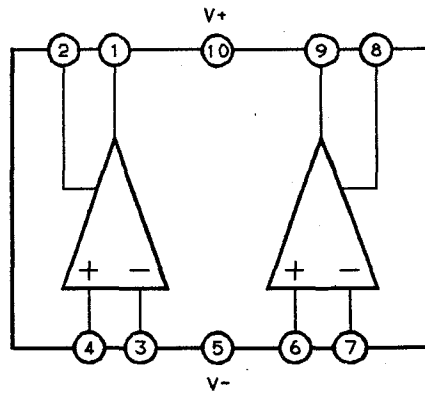
**YM3805 TOP/SIDE VIEW**



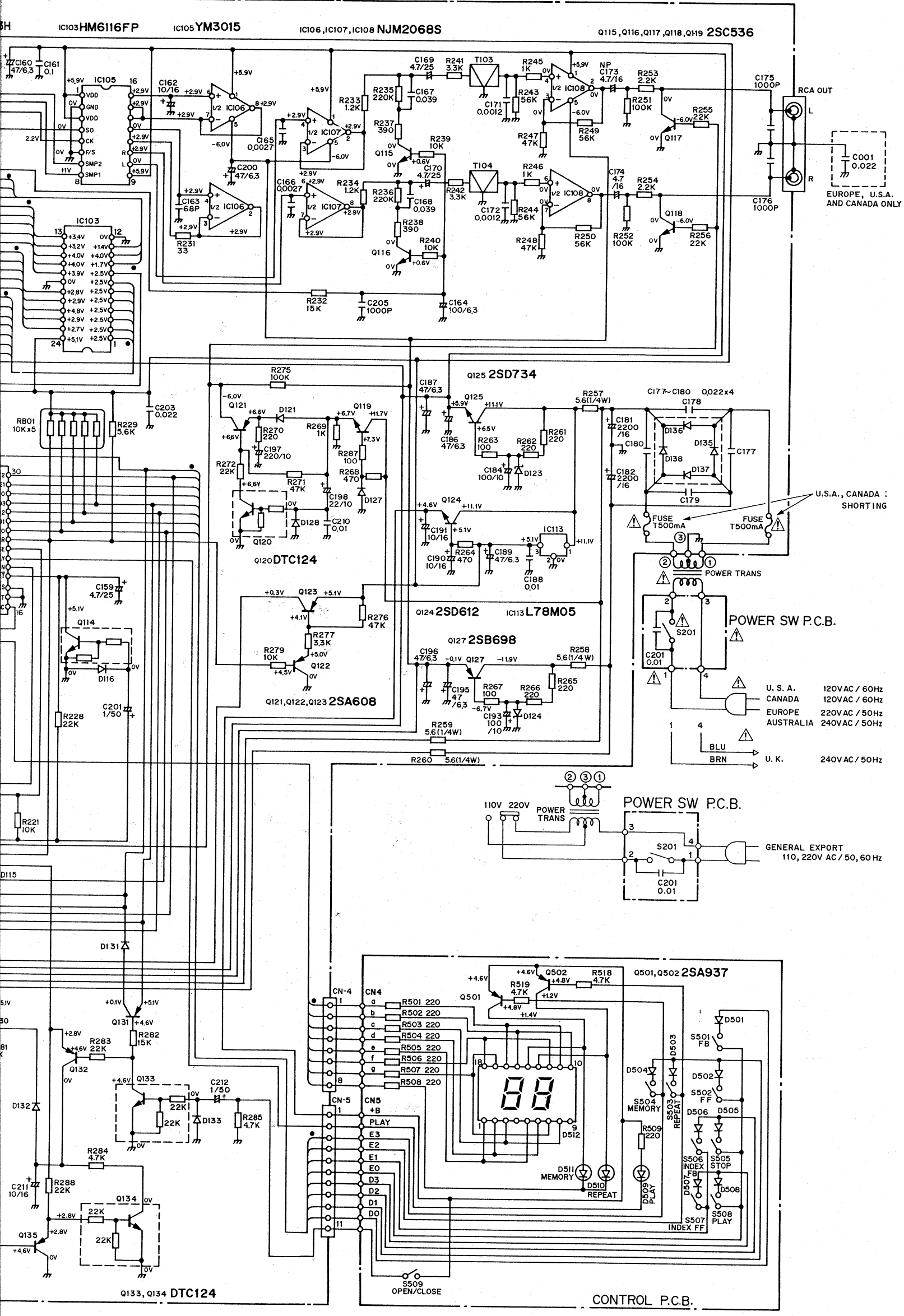
**NJM4556 BLOCK DIAGRAM**



**TA7256P BLOCK DIAGRAM**







EUROPE, U.S.A. AND CANADA ONLY

U.S.A., CANADA : SHORTING

U. S. A. 120VAC / 60Hz  
 CANADA 120VAC / 60Hz  
 EUROPE 220VAC / 50Hz  
 AUSTRALIA 240VAC / 50Hz  
 U. K. 240VAC / 50Hz

GENERAL EXPORT 110, 220V AC / 50, 60 Hz

12	13	14	15	16	17	18	19	20
1.0V	1.9V	1.9V	0V	1.9V	0V	0V	5.1V	0V

12	13	14	15	16
2.9V	0V	2.9V	2.9V	2.9V

No.	Name	Position
SW101	LOADING OPEN LIMIT Switch	OFF
SW102	PICKUP LIMIT Switch	OFF
S201	POWER Switch	OFF
S501	F BACK Switch	OFF
S502	F FWD Switch	OFF
S503	REPEAT Switch	OFF
S504	MEMORY Switch	OFF
S505	STOP Switch	OFF
S506	SEARCH INDEX Switch	OFF
S507	SEARCH INDEX Switch	OFF
S508	PLAY Switch	OFF

**PRODUCT SAFETY NOTICE**

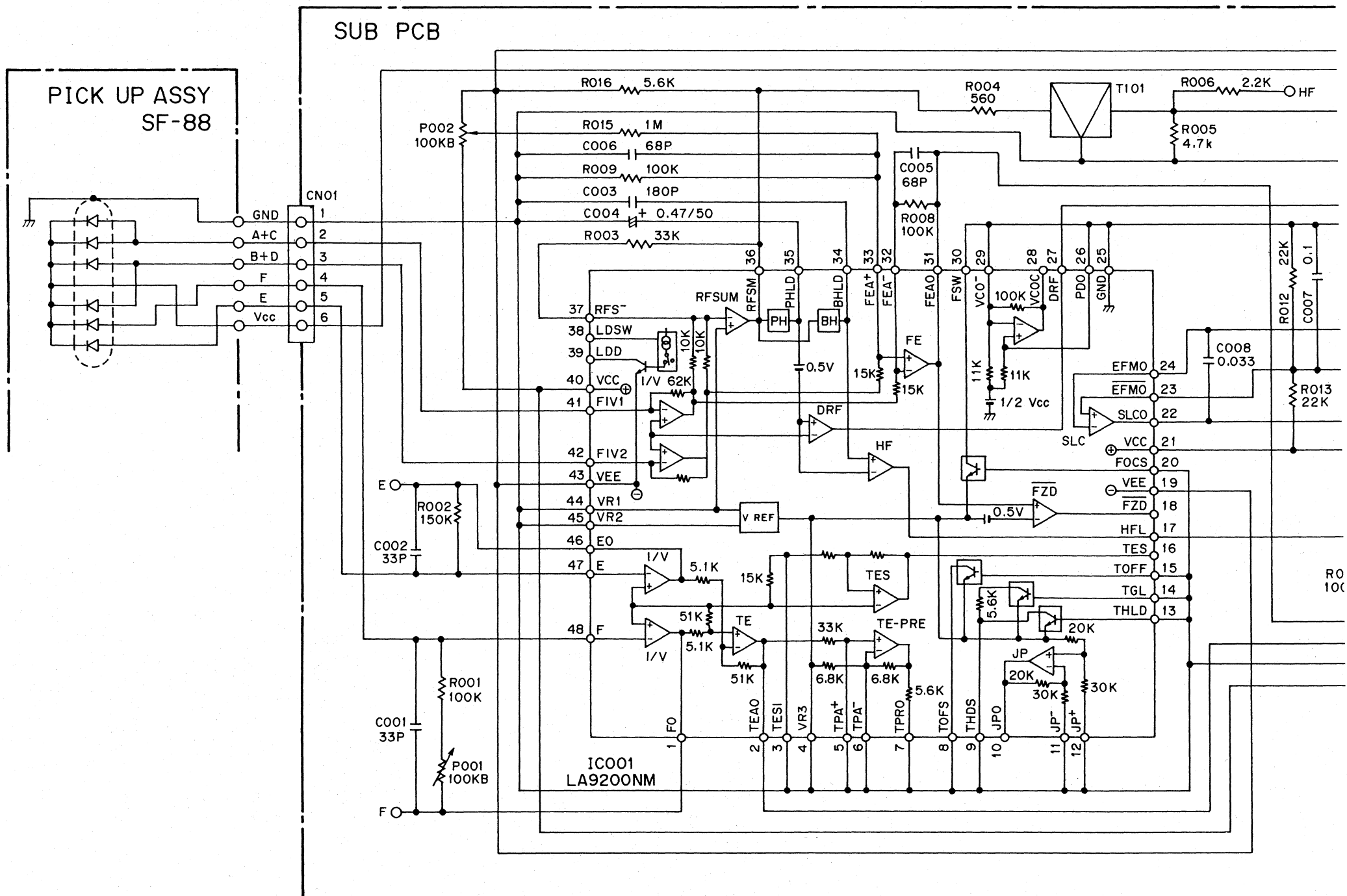
Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol  $\Delta$  in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with  $\Delta$ , use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

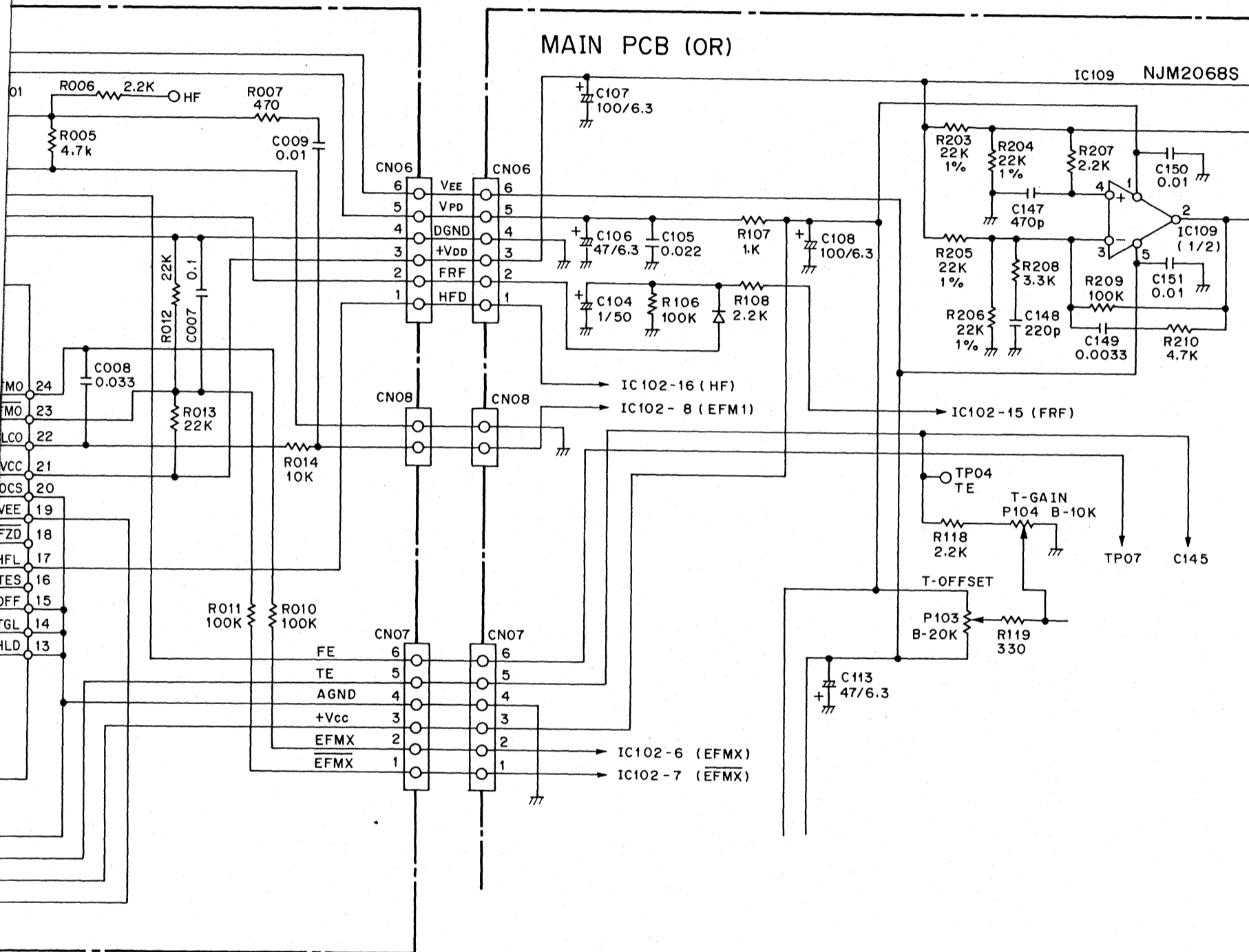
All voltages  $\pm 10\%$  with respect to chassis ground.  
 No signals at input terminals.  
 AC input at 240 volts 50Hz.  
 This is a basic schematic diagram.



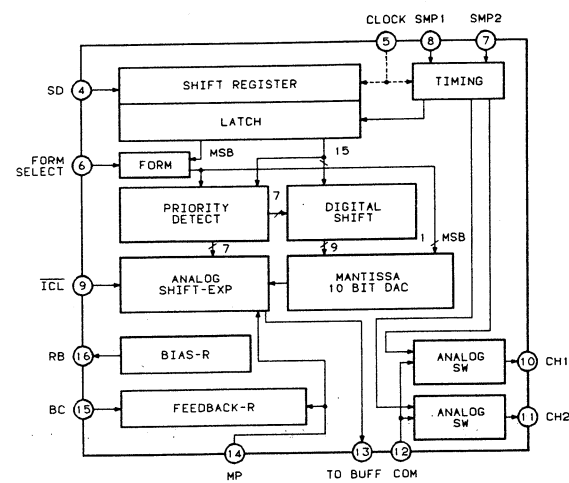
1 2 3 4 5 6

A  
B  
C  
D  
E  
F  
G  
H

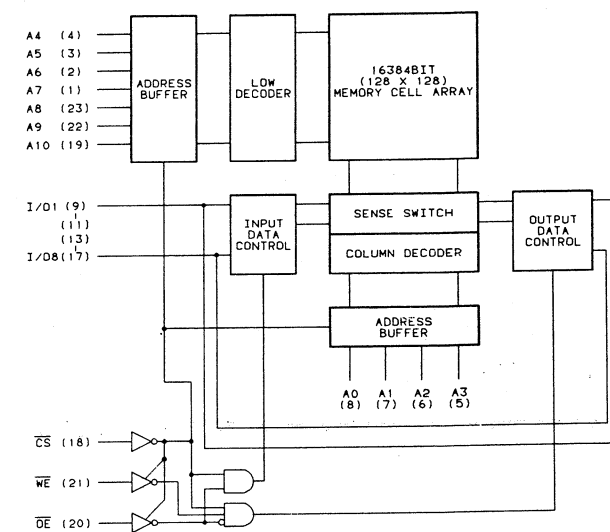




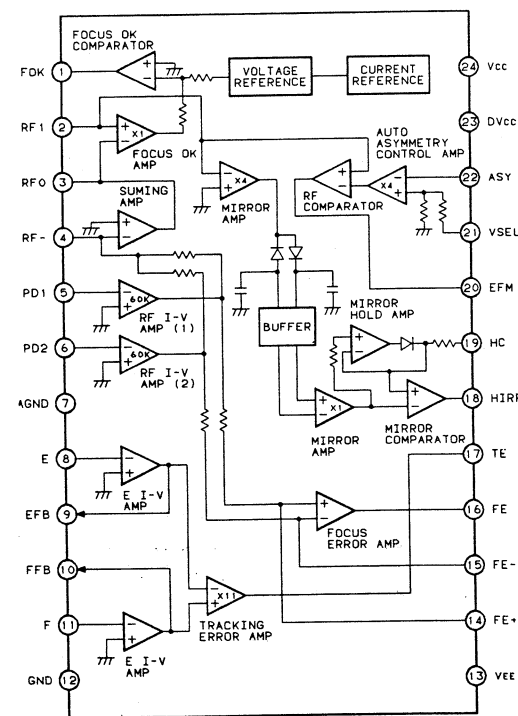
HM6116 BLOCK DIAGRAM



YM3015 BLOCK DIAGRAM



CX20109 BLOCK DIAGRAM



YM3805 BLOCK DIAGRAM

