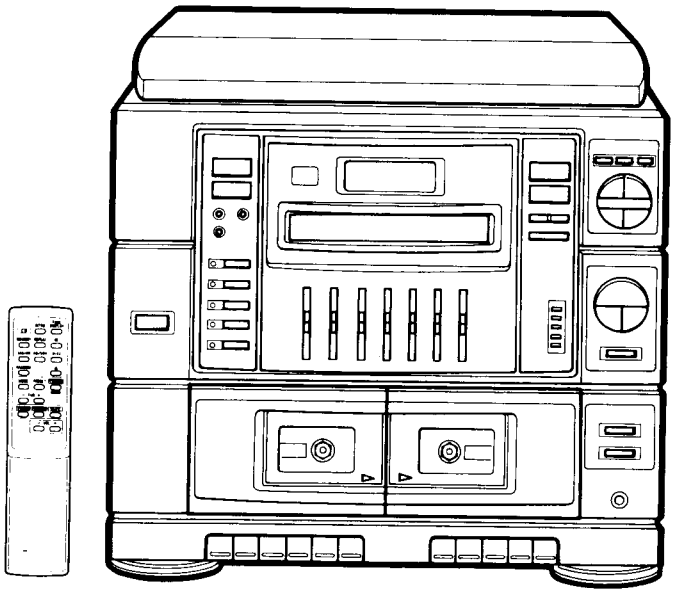
SANYO

FILE NO. E-2496

Service Manual

CD Stereo Sound System

DC X210 (XE)



Specifications

PRODUCT CODE No.
129 386 01

Turmtable section

Drive system	Belt drive

Tuner section

Frequency range	FM : 87.5 - 108MHz MW : 522 -1611kHz LW : 144 - 290kHz

Cassette desk section

Recording system	AC bias, 4 - track stereo
Rewind and fast foward time	Approx. 120 sec. (C-60)

CD player section

Channels	2 channels
Frequency response	20 -20,000Hz
S / N ratio	96 dB
Channel separation	90 dB (1kHz)
Distortion	0.04% (1kHz)
Wow and flutter	Undetectable

General

Output power	15W×2 (at 8 ohms, 1kHz, 10% distortion)
Inputs	VIDEO : 47k ohms (250mV)
Outputs	SPEAKERS : 8 ohms PHONES : 8 ohms
Power rewurements	AC : 230V(115V), 50Hz
Dimensions (W×D×H)	Approx. 360×365×355mm

Remote control

Power requirements	DC : 3V, "R6 / HP7" battery×2
Dimensions (W×D×H)	Approx. 41×18×175mm

Specification subject to change without notice.

REFERENCE No. SM-580035

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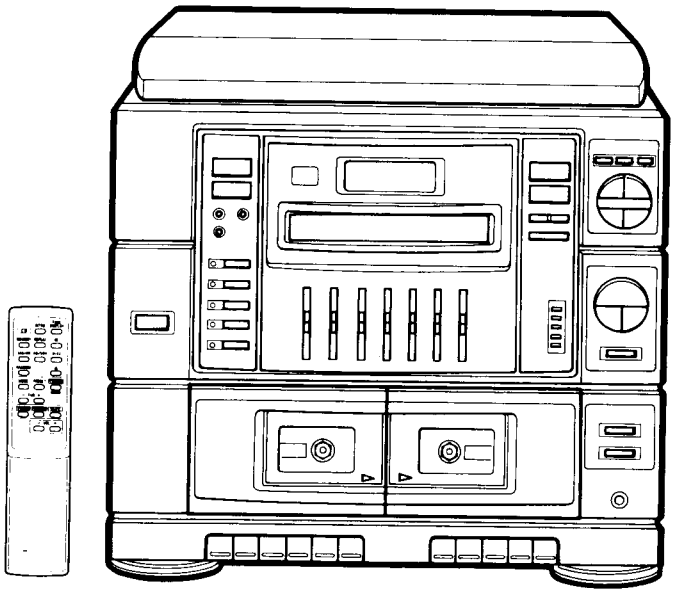

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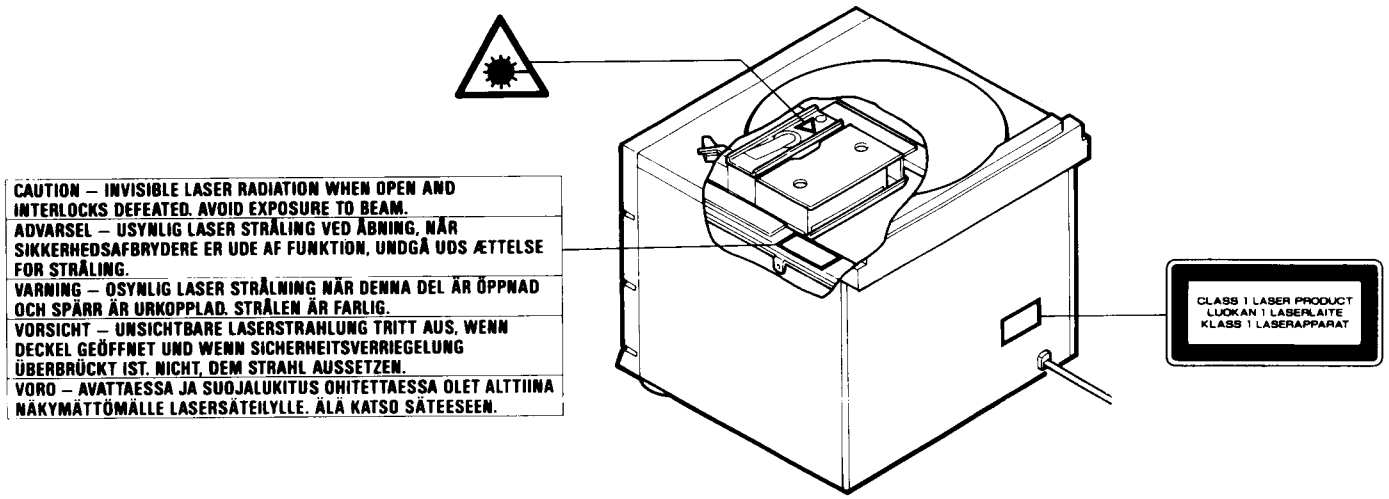
REFERENCE No. SM-580035

LASER BEAM SAFETY PRECAUTIONS (CD)

Do not look straight at the laser beam from the pickup and do not point the beam at your fingers or any other part of your body.
Note: The laser beam must never be allowed to enter the eyes since this may damage the eyes.
Power must never be supplied to a pickup with a damaged laser output part (objective lens, etc.).

Structural Safety Interlock
This model has a disc chuck lever and top lid. This disc chuck lever and top lid prevent to expose the laser beam for users.

INVISIBLE LASER RADIATION EXPOSURE TO BEAM IS DANGEROUS CLASS 1 LASER PRODUCT
OUTPUT POWER : 0.6 mW MAX WAVELENGTH : 790 nm



1. Precautions for handling the pickup and semiconductors (particularly the ICs)

a. The pickup and semiconductors (particularly the ICs) may be damaged if they come into contact with a source of high voltage static electricity. Do not bring them, therefore, into contact with or into the vicinity of anything which has been charged with high voltage static.
b. The pickup consists of a large number of optical and precision parts. Do not store or repair it, therefore, in any location with a high temperature, high humidity, high magnetic fields or high dust concentration. (Since the pickup contains a powerful magnet, it must not be brought near any magnetized objects.)
c. Do not apply strong external pressure to the pickup or subject it to impact. Actions like these can cause the printed circuit board to crack or malfunctioning to occur.
d. The pickup is a single integrated part which has been very precisely adjusted. Therefore, its adjustment points and set screws must not be touched.

2. How to prevent static during handling

a. When replacing any of the parts, disconnect the power plug from the unit being repaired.
b. All measuring instruments, tools and repair equipment must be grounded. Cover the work bench where the repair work will be done with a grounded electrically conductive sheet.
c. Ground the metal part of the soldering iron in order to safeguard against leakage of electricity from the heater.
d. Repair personnel must wear grounding bands around their wrists to discharge static picked up by their bodies. These bands are grounded through a resistor (with a 1MΩ resistance).

Note: Under no circumstances must be the grounding bands be grounded without a resistor (with a 1MΩ resistance) since doing so involves the risk of electric shocks.

Since static in the clothes of the repair personnel will not be discharged by wearing grounding bands, every care must be taken not to allow the clothes to touch the pickup and semiconductors (particularly the ICs).

e. The pickup, which is a single integrated part, is kept in a conductive bag. Use this bag to convey the pickup from one place to another. In order to avoid damage resulting from static which may occur when the pickup is removed from the bag, make sure that it is not placed on top of the bag.

3. Cleaning the lens surface

a. Blow off dust on the lens using the kind of air brush which is used for cameras.
b. Remove stubborn dirt with a cotton swab dipped in isopropyl alcohol. Do not use any other type of cleaning fluid since it may mark the plastic lens.

Notes: • Do not use too much isopropyl alcohol: the excess may seep inside the pickup.
• The lens is held in place by a very feeble support spring. Therefore, when cleaning the lens, avoid applying any more force by the cotton swab than is necessary since this may bend the support spring out of shape.

TUNER ADJUSTMENT

PREPARE :

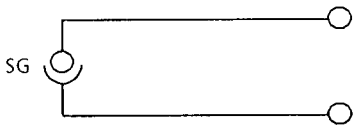
1. For adjustment,change over setting of switches and controls to the following position.
   FUNCTION:TUNER
   FM MODE:ST
   BALANCE : Mechanical center.

- Use a plastic screwdriver for adjustment.
- Adjust the intermediate frequency of AM and FM to the frequency of ceramic filter.
- Set the dial position to very left line of dial scale.

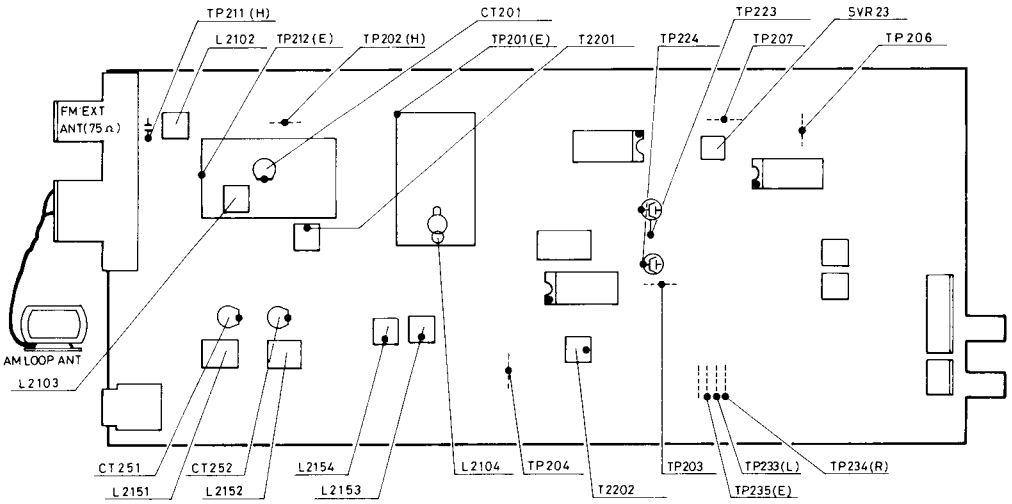
GENERAL ADJUSTMENT CONDITIONS

Standard output level : 50 mW(0.63V/8 ohm)
Standard moduration : FM Main 1 kHz ± 22.5 kHz Dev.
Pilot ± 6.75 kHz.

FM 75 OHM UNBALANCE DIRECT
DUMMY PAD



RF Level:75 ohm , Open SG voltage dBμV



1. FM BAND

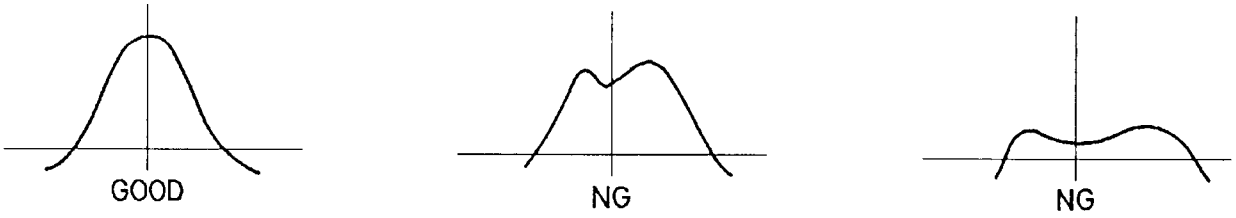
Antenna : 75 ohm Direct, Modulation : 1kHz, Dev. : ±75kHz (mono / stereo) · ±40kHz (main) · ±6.75kHz(pilot)

STEP	ITEMS	TUNING FREQUENCY	INPUT CONDITION		OUTPUT CONDITION		PARTS	STANDARDS
			MEASURE	INPUT	MEASURE	OUTPUT		
1	IF(V CURVE)	10.7MHz	IF Sweep generator	TP211(H) TP212(E)	IF Sweep generator	TP223(H) TP224(E)	T2201	Usually, not to alignment for presetted. See note ①
2	COVER	87.5MHz	------	------	DC Voltmeter	TP202(H) TP201(E)	L2104	Confirm voltage is about 1.0~1.3V.(*1)
		108.0MHz					------	Confirm voltage is below 8.5V (X = 6.6V)
3	TRACKING	90.0MHz	FM SG (about 8dB)	TP211(H) TP212(E)	VTVM Oscilloscope	TP233(L) TP234(R) TP235(E)	L2102 L2103	AF output maximum
		106.0MHz					CT201	
4	0V	98.0MHz	FM SG (66dB)	TP211(H) TP212(E)	Digital Voltmeter	TP203(H) TP204(E)	T2202	0V ± 0.05V. See note ②
5	VCO				Frequency Counter	TP206(H) TP207(E)	SVR23	19KHz ± 50Hz See note ③
6	SEPARATION				VTVM Oscilloscope	TP233(L) TP234(R) TP235(E)	------	L-R · R-L : Minimum DEV(MAIN) = ± 40kHz
7	Stereo Sensitivity	98.0MHz	FM SG	TP211(H) TP212(E)	Digital Voltmeter	------	------	Confirm stereo indicator lights up.

*: Use IHF filter adjusted from 200~15000 Hz BPF. Set the Mode switch to STEREO position. When connect counter should be inserted 220k ohm resist in series.

ADJUSTMENT (TUNER)

Note : ① Confirm IF waveform maximum and symmetric as shown below. If IF waveform is NG, please adjust T2201 as it become GOOD.



② Be careful so that digital voltmeter earth may not be in contact with other measuring equipments earth.
③ Adjust in the modulation off after the stereo indicator light on.

2. MW BAND (No alignment)

Antenna : IRE Loop, Modulation : 400Hz 30%

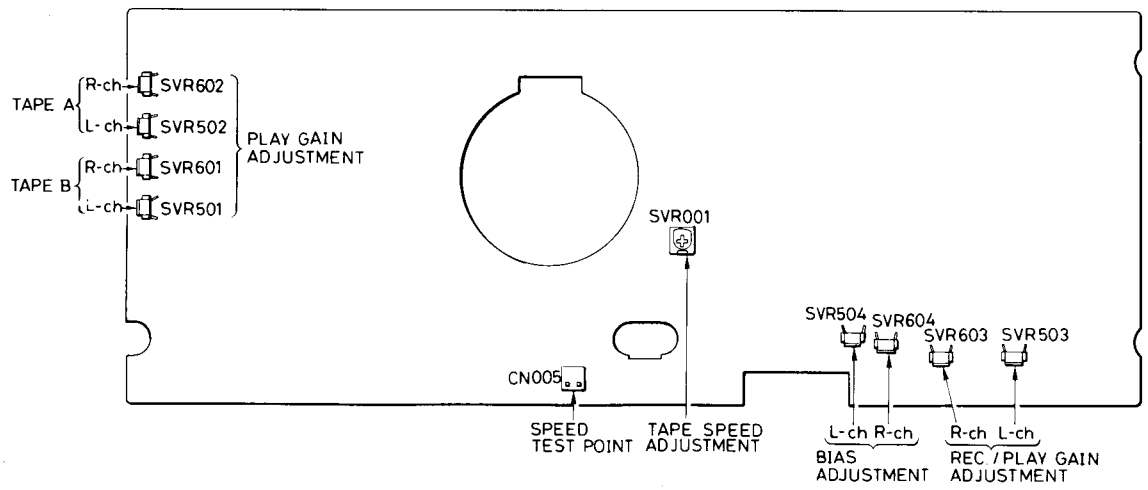
STEP	ITEMS	TUNING FREQUENCY	INPUT CONDITION		OUTPUT CONDITION		PARTS	STANDARDS
			MEASURE	INPUT	MEASURE	OUTPUT		
1	COVER	522kHz	------	------	Digital Voltmeter	TP202(H) TP201(E)	L2153	Confirm voltage is about 1.0~1.4V(*2)
		1611kHz					------	Confirm ≦8.5V (about 7.2V)
2	TRACKING	603kHz	AM SG(80dB)	LOOP ANT	VTVM Oscilloscope	TP233(L) TP234(R) TP235(E)	L2152	Output : Maximum Adjust to near the effective sensitivity.
		1404kHz					CT252	
3	SD (Auto Stop)	999kHz (about 85dB)	AM SG	LOOP ANT	Digital Voltmeter	------	------	Confirm auto tuning stops

3. LW BAND (No alignment)

Antenna : IRE Loop, Modulation : 400Hz 30%

STEP	ITEMS	TUNING FREQUENCY	INPUT CONDITION		OUTPUT CONDITION		PARTS	STANDARDS
			MEASURE	INPUT	MEASURE	OUTPUT		
1	COVER	144kHz	------	------	Digital Voltmeter	TP202(H) TP201(E)	L2154	Confirm voltage is about 1.3~1.8V(*3)
		290kHz					------	Confirm ≦8.5V (about 6.5V)
2	TRACKING	162kHz	AM SG(80dB)	LOOP ANT	VTVM Oscilloscope	TP233(L) TP234(R) TP235(E)	L2151	Output : Maximum Adjust to near the effective sensitivity.
		279kHz					CT251	

*1:If voltage is not within this voltage at FM band,aliign 1.2V.
*2:If voltage is not within this voltage at MW band,aliign 1.2V.
*3:If voltage is not within this voltage at LW band,aliign 1.6V.



ADJUSTMENT OF DECK & MECHANISM TORQUE

1. AMPLIFIER ADJUSTMENT

Input terminal : VIDEO IN

	ITEM	DECK	TEST TAPE	INPUT	DOLBY SW	OUTPUT	ADJUST POINT	REMARKS
1	Head Azimuth	TAPE A TAPE B	VTT-738	-	OFF	TAPE OUT	Azimuth Screw	Adjust so as 10kHz output become maximum.
2	Playback Level	TAPE A	TCC-130	-	OFF	TAPE OUT	SVR502 SVR602	Adjust so as TAPE OUT output become 0.54V.
		TAPE B					SVR501 SVR601	
3	Rec / Play Level	TAPE B	AC-224	1kHz -13dB	OFF	TAPE OUT	SVR503 SVR603	Adjust SVR so as Monitor output = R/P Level = 0 ± 1dB.
4	Rec / Play Frequency	TAPE B	AC-224	1kHz / 10kHz -20dB	ON	TAPE OUT	SVR504 SVR604	Adjust to obtain same output of 1kHz and 10kHz.

Note.
1. Perform BIAS alignment by SVR504·604 so as No.3 satisfy spec of all item. Perform output alignment by SVR503·603.
2. During alignment, measurement Beat cancel SW is at 1 condition fundamentally, confirm. R/P frequency characteristic, dolby effect also by 2 condition, when ship out set SW to 1 position.
3. Fix to MAIN VR the position that SP output playing VTT722 is about 2.83V-10dB.(2.83V ≒ 1W output)

2. TAPE SPEED ADJUSTMENT

STEP	SPEED	DECK	TEST TAPE	SVR	TAPE COUNTER	REMARKS
1	Normal	TAPE A	MTT-111N etc. : 3000 Hz	SVR001	3000 ± 5Hz	Memorize the tape speed on counter.
2	High	TAPE A	TCW-211 etc. : 1500 Hz		3000 - 40 ~ 70Hz	

Connect the tape-speed(frequency) counter to TAPE OUT on P.C.Board.
Confirm that the Tape speed of TAPE A is in 3000 - 40 ~ 70Hz by the TCW-211 test tape.

1. Set the test tape(MTT-111) to "TAPE A" deck. (play only mechanism)
2. Adjustment to obtain the tape speed counter at play of step 1.

Note : Set the test tape near the tape end.

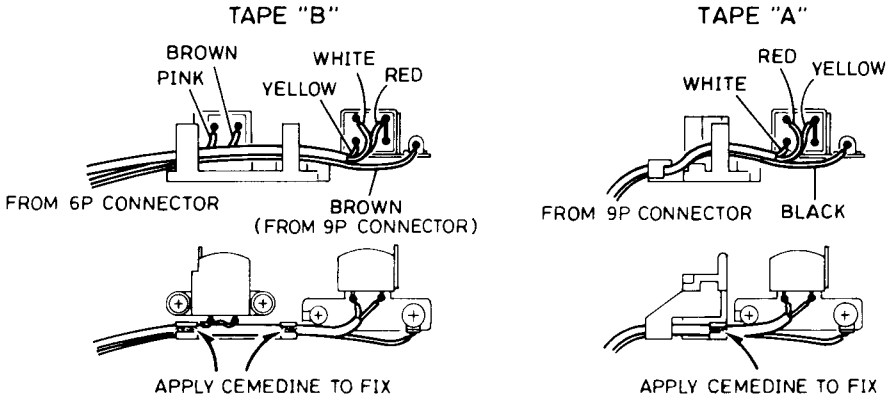
High speed adjustment should be made after normal speed adjustment.

1. Set the Blank tape(C-60) to "TAPE B" deck. (record/play mechanism)
2. Set the test tape (TCW-211) to "TAPE A" deck.
3. Set the Dubbing speed "HIGH".
4. Confirm the indication of the tape speed counter within 2 second after push the PLAY(TAPE A) and REC. (TAPE B) button.

3. TORQUE MEASUREMENTS

ITEM	TAKE-UP TORQUE	BACK TENSION	TAPE TENSION
TEST CASSETTE	PLAY : TW2111A F.FWD / REW : TW2231	PLAY : TW211A	Driving power cassette: TW-2412
PLAY	30 ~ 60gr.cm	2.0 ~ 4.5gr.cm	> 60g
F.FWD · REW	55 ~ 120gr.cm	-	-

4. REPLACEMENT OF HEAD



CD MECHANISM REMOVAL

1) Preparations

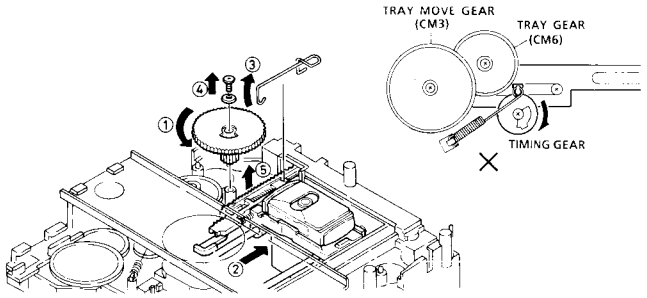
1) Do not apply unnecessary force to the pickup when handling it. Care should be taken not even to touch the lens or drive circuit sections.
2) Do not apply unnecessary force (do not pull or push it forcefully) to remove the disc tray from its inside position. Unnecessary force may break the teeth on the tray gear (CM6).
3) In the descriptions which follow, the numbers in the parentheses after the parts are reference numbers in the exploded views. Refer to these views.

2) Removing and installing the disc tray

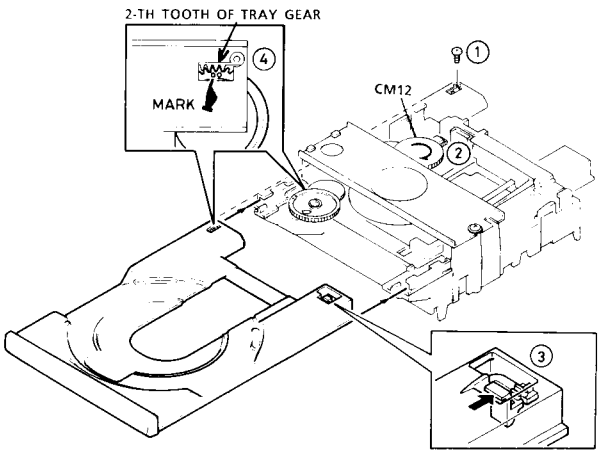
1) Remove the stop screw (Y10) of the disc tray (17). (①)
2) Pull the disc tray (17) all the way forward by turning the tray drive gear (CM12) clockwise. (②)

Note: Do not take hold of the disc tray (17) and pull it out by force.

3) Push the catch on the disc tray (17) in the direction shown by the arrow, and draw out the disc tray (17).
4) To install the disc tray, turn the gear (CM12) in the direction of the arrow as far as it will go. (③)
5) Align the disc tray (17) with the mechanism chassis (CM39).
6) Push the disc tray (17) toward the rear, and interlock it with the tray drive gear (CM12) as shown in Fig.④ .
7) Secure it with the screw (Y10) which was removed in step 1).



DISC TRAY REPLACEMENT



3) Disassembling the mechanism

(1) Removing the pickup block

1) Remove the disc tray (17). (Refer to steps 1), 2) and 3) of the section entitled "Removing and installing the disc tray.")
2) Turn the tray drive gear (CM12) counterclockwise (①), and move the pickup in the direction of arrow (②) as far as it will go.
3) Remove the spring wire (CM27) with tweezers. (③)
4) Remove the screw (CM11), and also remove the disc tray (17) and washer (CM13). (④)
5) Now remove the pick rack gears (CM16 and CM19).

Note: It will not be possible to remove the pick rack gears (CM16 and CM19) unless the pickup has been moved all the way in the direction of arrow (②).

6) The pickup block can now be removed by taking out the screw (CM51).

Note: If the timing gear (CM23) is in the state shown by "X" in the figure on the right, put it in the state shown by "○".

MECHANISM REMOVAL (CD)

(2) Replacing and lubricating the pickup

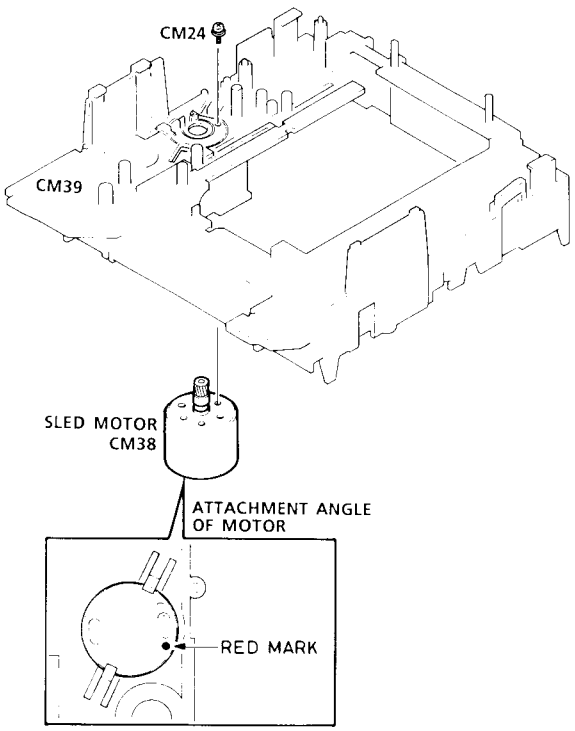
1) Pull out the two pickup rails (CM43) from the chassis (CM50).
2) The pickup (CM52) can now be removed once the two pickup rails (CM43) have been taken out.
3) When the pickup has been replaced, be sure to wipe the two pickup rails (CM43) cleanly and apply grease (FLOIL G-474B) around the entire circumference of the rails and along their entire length,
4) Pass the two pickup rails (CM43) through the new pickup (CM52), insert them into the chassis (CM50), and fix them in place at an angle of 45° as shown in the figure.

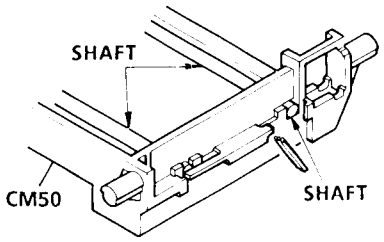
Notes: a. When applying the grease, do not allow any grease to adhere to any other parts.

b. If a part (indicated by the dots in the figure) of the chassis (CM50) is damaged in the process of removing or inserting the two pickup rails (CM43) from or into the chassis (CM50), wipe the damaged area with a cloth dipped in alcohol (normal hexane), and bond it together using a bonding agent (Cemedine #575).

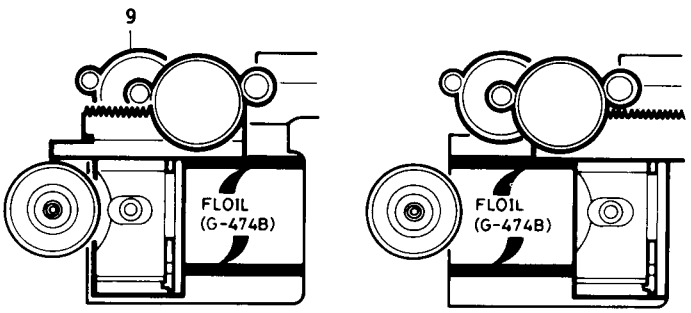
(3) Replacing the loading/sled motor

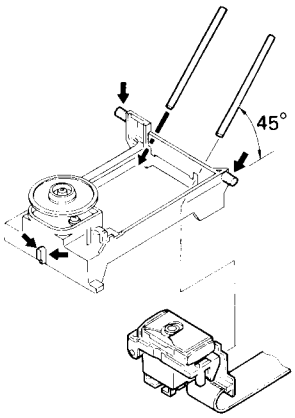
1) The loading/sled motor (CM38) can be removed from the chassis (CM39) once the screw (CM24) securing the motor (CM38) is removed.
2) Mount the new loading/sled motor (CM38) onto the chassis (CM39) using the screw (CM24).

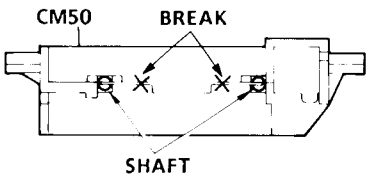




FIX BY THE CEMEDINE #575

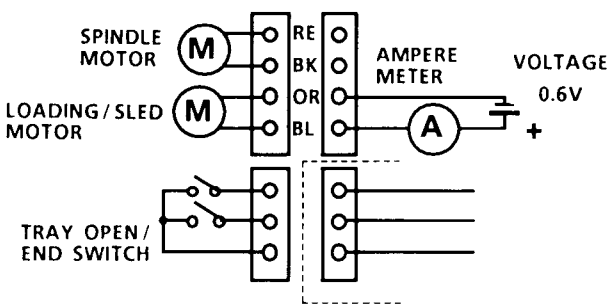






(4) Checking the loading/sled motor's operation

1) As shown in the figure, connect an ammeter and a DC power supply to the loading/sled motor (CM38), and set the tray open and end switches to the "off" [open] positions.
2) Check that the pickup (CM52) moves smoothly without stopping from the inner circumference of the compact disc toward its outer circumference when a DC 0.6V voltage is applied from the DC power supply.
3) The disc tray is housed inside and the gear (CM9) slips when a DC 4V voltage is applied from the DC power supply. Check that the ammeter indicates 120mA or more at this time.

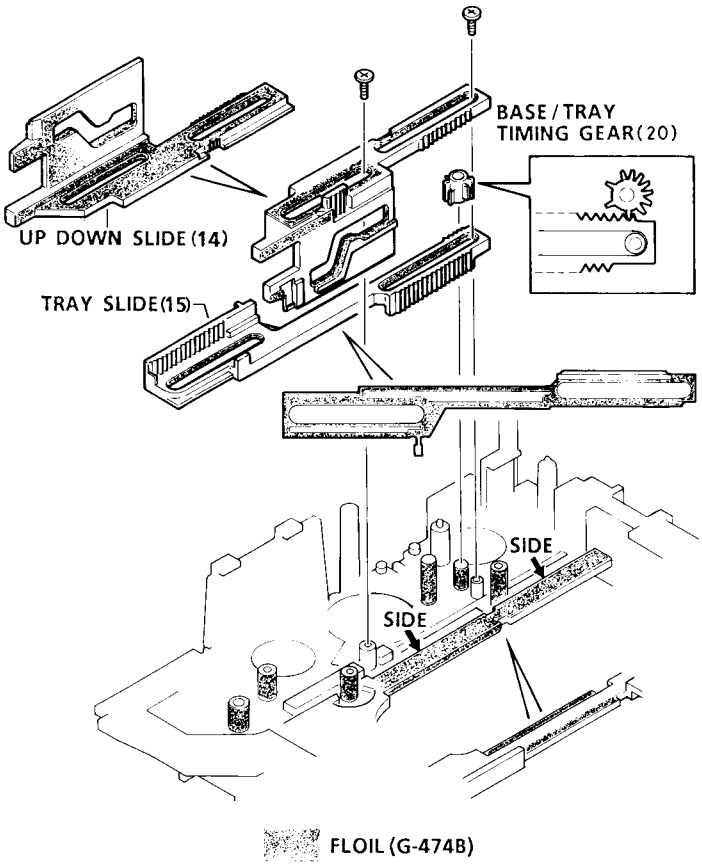


MECHANISM REMOVAL (CD)

4. CD MECHANISM ASSEMBLY & APPLY GREASE

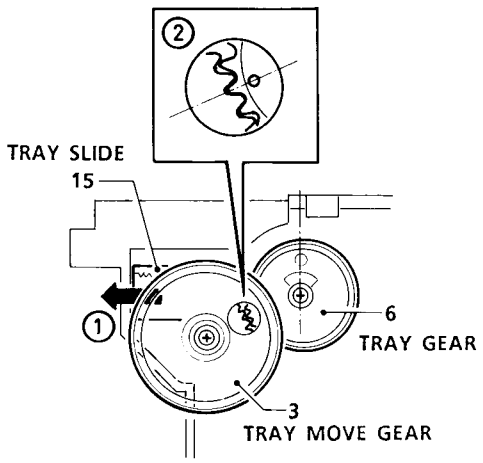
(1) APPLY GREASE AND INSTALL THE TRAY SLIDE

1) Apply the grease FLOIL (G-474B) at part of right figure.
2) When insert a tray slide (15), set up the installation position with base and tray timing gear as follow figure.



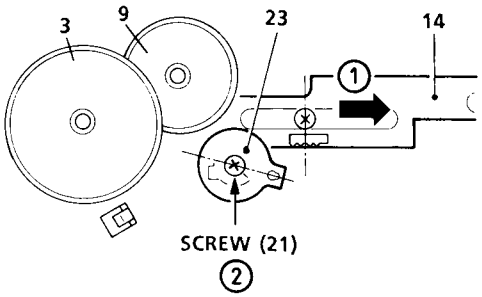
(2) INSTALL THE TRAY GEAR

1) Near the Tray slide (15) in the direction of the arrow.(①)
2) Match the inner gear center of Tray gear (6).
3) Install the Tray move gear (3) with match the outer gear make(○) of Tray gear (6) as figure below.

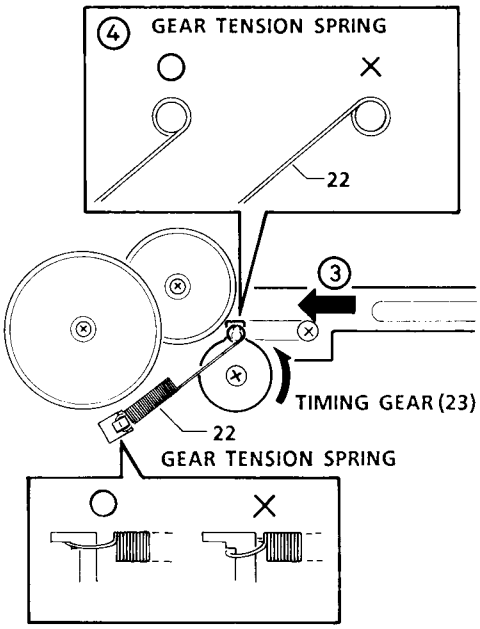


(3) INSTALL THE BASE-UP/DOWN SLIDE AND TIMING GEAR

1) When near the Base up/down slide (14) in the direction of the arrow(①), set up the four gear(23) as follow figure position.
2) Insert the timing gear and stop by the screw (21).(②)
3) Turn the timing gear (23) to left direction.

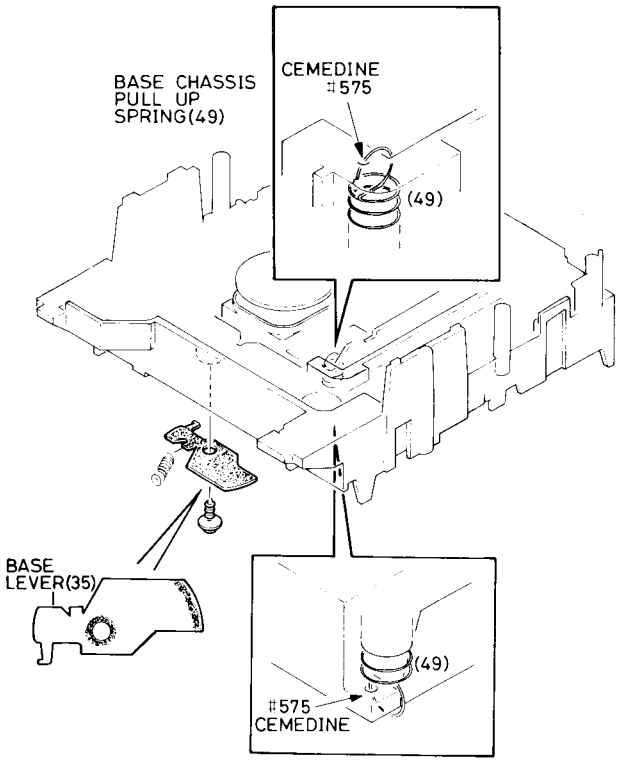


4) Hook the gear tension spring (22) to timing gear (23).

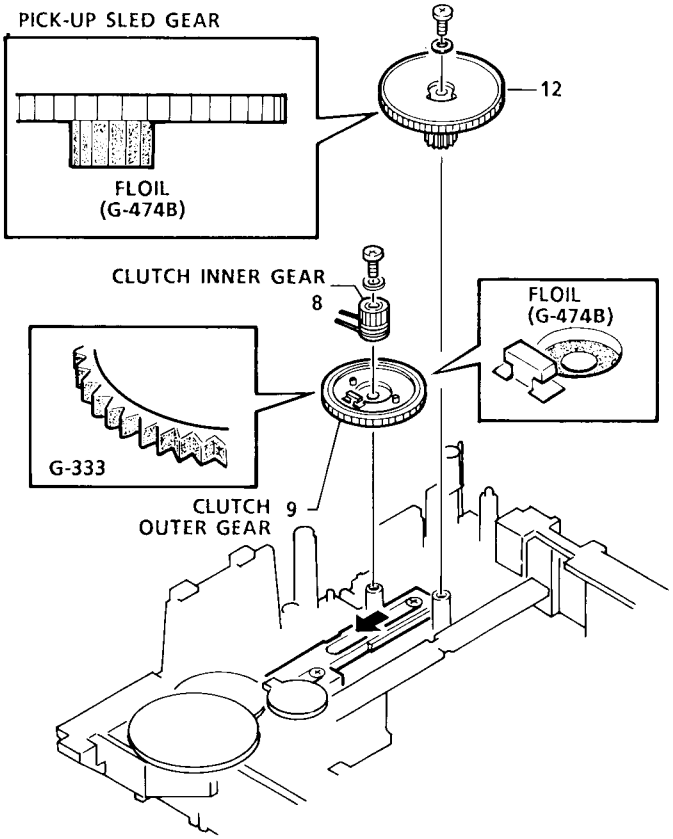


MECHANISM REMOVAL (CD)

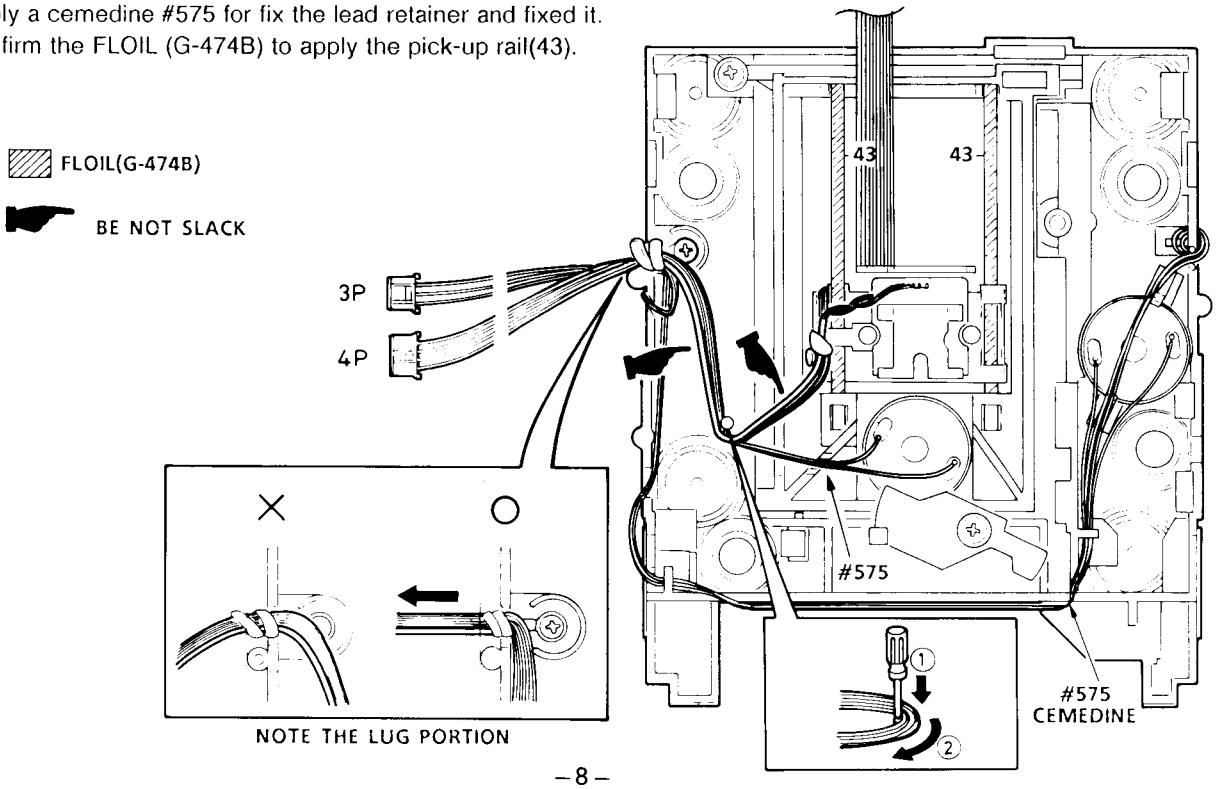
(4) APPLY A GREASE OF BASE LEVER (35)
Apply a coating of FLOIL (G-474B)



(5) APPLY A GREASE
1) Apply a coating of FLOIL (G-474B) to their entire circumference to Pick-up sled gear (12).
2) Apply a grease (G-333) to outside of clutch outer gear (9).
3) Apply a FLOIL (G-474B) to figure parts of clutch outer gear.



(6) LEAD RETAINER AND APPLY A CEMEDINE
1) Set up a pick-up to inner side and pass through on the pin (a), still more lead retainer not to touch at motors outside (b) and fixed the lug.Finally, confirm the pick-up moves smoothly from inner to outer circumference.
2) Apply a cemedine #575 for fix the lead retainer and fixed it.
3) Confirm the FLOIL (G-474B) to apply the pick-up rail(43).



SERVICE MODE

Specifications

To enter any service mode other than timer debugging, first simultaneously press the CD Memory key and BAND keys on the set when Power on. This accesses the service mode entry state. Now press one of the buttons on the set to enter a service mode. As the service mode entry state is discontinued after 1 second elapses. (the system will enter a service mode only if the next key is pressed within one second.) And more, press the 2 keys when reset start to enter a CD Tracking Balance mode.

1. Checking the key input signal connections

◇ Enter this mode by pressing the MEMORY(TUNER) key during the service mode entry state.
◇ The entire LCD goes out once this mode is entered.
◇ In this mode, as keys on the set are pressed segments on the LCD corresponding to each key on a one-to-one basis come on (i.e. the lit portions gradually increase). (Refer to Table 1.)
◇ Press the MODE key to exit this mode and return to the normal mode.

KEY	DISPLAY
TU/BAND	REC
TU/MEMORY	※
TUNING/UP	SLEEP
TUNING/DOWN	CONT
PRESET UP	SIDE A
CD/MEMORY	PROG
CD/REPEAT	REPEAT

KEY	DISPLAY
PLAY/PAUSE	▶
STOP	ONE
⏭	DISC
⏮	TRACK
PRESET DOWN	SIDE B
RANDOM PLAY	RANDOM
INTRO SCAN	INTRO

KEY	DISPLAY
EDIT	EDIT
(PHONO)	12 OF CALENDAR
CD	13 OF CALENDAR
TUNER	14 OF CALENDAR
TAPE	15 OF CALENDAR
VIDEO	▶ OF CALENDAR

※ : Releases the key checking mode and returns the set to the normal mode.

TABLE 1 : CORRESPONDING KEYS AND DISPLAYS IN THE KEY CHECKING MODE

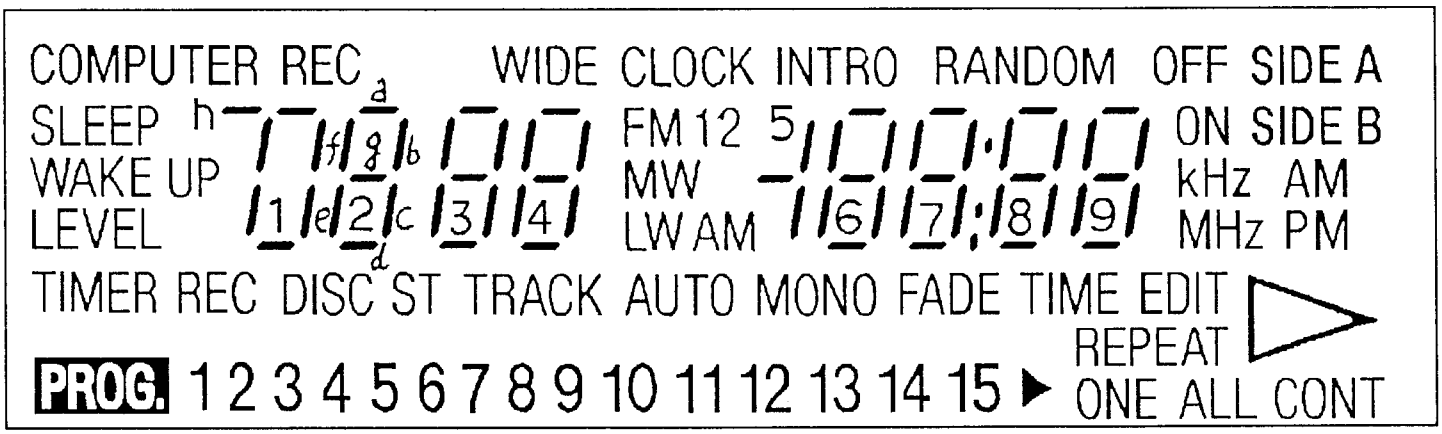


FIGURE 1 : LCD (LIQUID CRYSTAL DISPLAY)

2. Checking LCD connections

- Enter this mode by pressing the REPEAT key during the service mode entry state. (See note.)
- The entire LCD goes out once this mode is entered.
- In this mode, one segment of the LCD lights each time the REPEAT key is pressed.
- Press the MODE key to exit this mode and return to the normal mode.

SERVICE MODE

3. CD tracking balance adjusting mode

- Enter this mode by pressing the PLAY/PAUSE key during the service mode entry state.
- If the power is off and when the reset started, by pressing CD MEMORY key and TU/BAND key with simultaneously, and enter this mode by power on.
- In this mode, the tracking balance adjustment state (tracking is off) is automatically entered. If the PLAY key is pressed in this state, the tracking servo is turned on and playing is begun at the present position. Therefore, the readout on the display at the time playing is begun indicates the initial position of the pickup (i.e. the position of the limit switch).
- In this mode, the tracking balance adjustment state can be entered by pressing the MEMORY key during playing. Pressing the PLAY key in this state turns on the tracking servo and causes playing to begin.
- Turning off the power releases the CD tracking balance adjusting mode.

4. CD operation display mode

- Enter this mode by pressing the STOP key during the service mode entry state.
- In this mode, when CD function are used, displays like those shown in Table 3 (which represent CD operations different than normally displayed) appear in the LCD track number display.
- In this mode, the calendar numbers shown in Table 4 come on when an error occurs in CD operations, at which time the track number and calendar displays become fixed at their current readouts.
- This mode is released when press the M ODE key or power is turned off.

DISPLAY	OPERATION
00	Focus search has been begun
01	Focus search has been begun
02	Waiting for focusing
03	Focusing
04	Spindle kick is in progress
05	Both CLV and tracking are ON
06	Both CLV and tracking are ON
0-	Focus search has been completed (success, failure)
22	Pick return (internal direction) is in progress
23	Pick return (external direction) is in progress
2-	Tray closing (pick return) has been completed
30	Spindle braking has begun
31	Spindle braking is in progress
32	Pick return is in progress
3-	Spindle braking and pick return have been completed
40	Fast forwarding is in progress
41	Rewinding is in progress
50	Playing has begun
51	Playing is in progress (break in the sound)
52	Playing is in progress (skip return operation)
60	TOC reading has been begun
61	TOC reading is in progress
62	TOC reading is in progress
6-	TOC reading has been completed (success/failure)
70	L-point access has been begun
71	L-point access (REV64 track jump)

DISPLAY	OPERATION
72	L-point access (FWD64 track jump)
73	L-point access (REV16 track jump)
74	L-point access (FWD16 track jump)
75	L-point access (REV1 track jump)
76	L-point access has been completed
80	Pausing has begun
83	Pause (REV16 track jump)
84	Pause (FWD16 track jump)
85	Pause (REV1 track jump)
86	Pause (trace)
90	Music access has begun
91	Music access (high-speed access has begun)
92	Music access (high-speed access is in progress)
93	Music access (high-speed access has been completed)
96	Music access (REV64 track jump)
97	Music access (FWD64 track jump)
98	Music access (REV16 track jump)
99	Music access (FWD16 track jump)
9A	Music access (final stage)
9-	Music access (final stage)

TABLE 3 : DISPLAYS DURING THE CD OPERATION MODE

CD ADJUSTMENT

Electrical Adjustment

So far we have presented explanations regarding compact disc player handling, notes prior to repair, handling the pickup and disassembly of the unit. Be sure to carefully read these instructions before making any adjustments.

Preparations for Adjustments

Measuring instruments, tools and filter

(1) Test disc. : YEDS 18 (Sony)

(2) Oscilloscope : SS5711 (10MHz or dual phenomenon) or Memoryscope : DSS6521 (Storagescope)

(3) Screw drivers (non-metalic) for adjustments

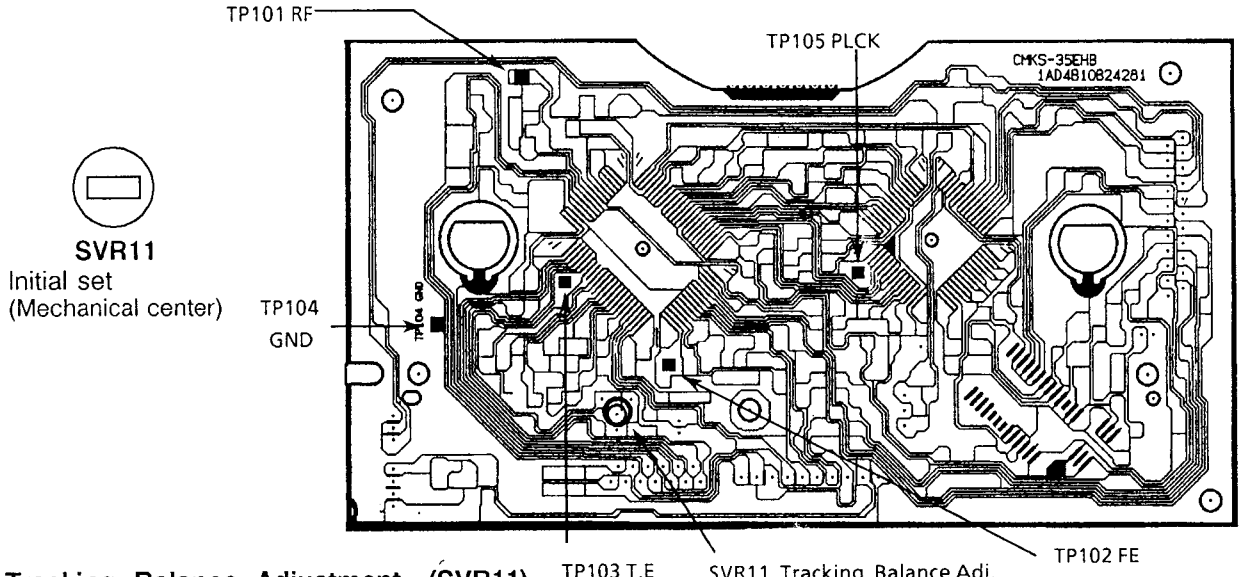
Notes :a. The adjustments can be using the equipment produced by other manufactures provided that the performance of that equipment corresponds to that of the above listed models.

b. Use a 10 : 1 probe for observing signals on the oscilloscope and storage scope.

c. Test disc is subject change without notice.

1. Initial set up

1. Set the SVR11 to the mechanical center position as the initial position of as shown in figure below.



2. Tracking Balance Adjustment (SVR11)

1. Connect the oscilloscope to TP1 (TE) and TP1 (GND.).
2. Turn on the power of the unit.
3. Insert the test disc, the press the CD button.
4. Press the TU/BAND button and the CD MEMORY buttonat the same time. Soon after , presst the PLAY/PAUSE button within a second.
   The unit enters the service mode(tracking balance adjustment mode).
5. Press the PLAY/PAUSE button.
6. Adjust SVR11 so that the TE (Tracking Error) signal waveform of TP3 on the oscilloscope is vertically symmetrical relative to 0V. (See figure as follows Fig.2)

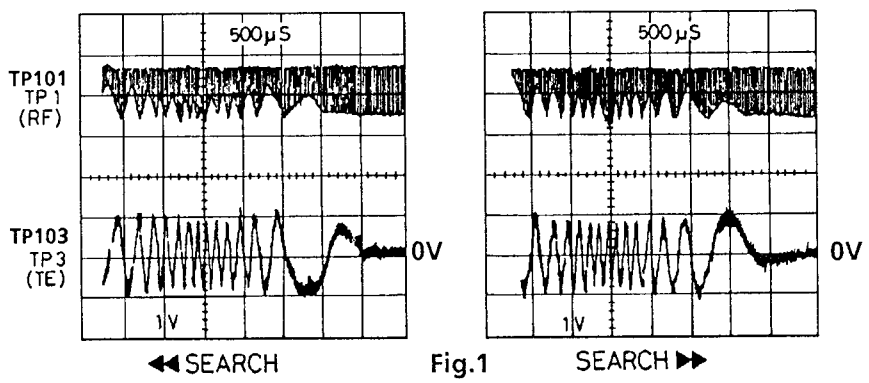


Fig.1

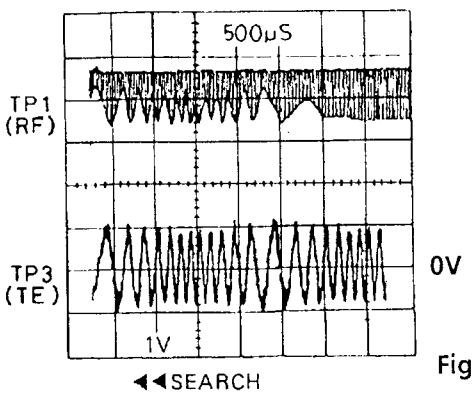


Fig.2

ADJUSTMENT

Other Adjustment (SVR11)

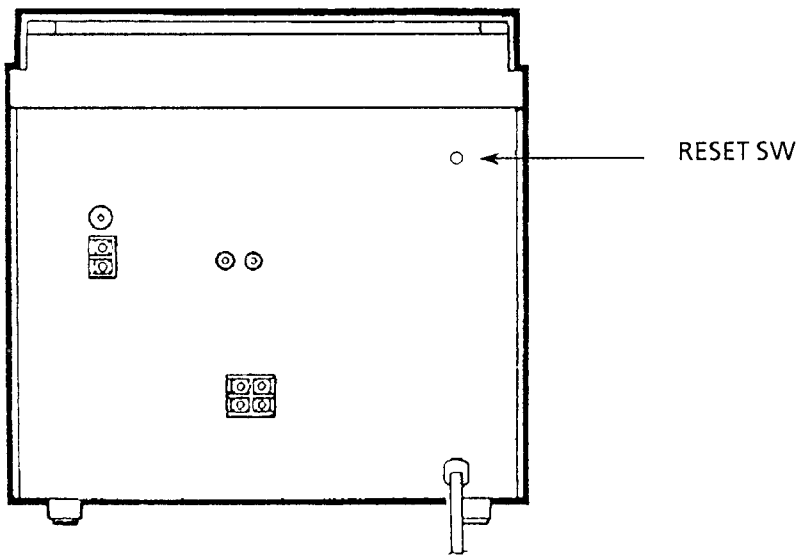
1. Connect the oscilloscope to TP3 (TE) and TP4 (GND.).
2. Turn on the power of the unit.
3. Insert the test disc, the press the CD button.
3. Continuously press the forward search ⏩ or backward search ⏪ button to do it.
4. Adjust SVR11 so that the TE (Tracking Error) signal waveform of TP3 on the oscilloscope is vertically symmetrical relative to 0V. (See figure as follows Fig.1)

Note : If this adjustment is imperfect, the sled motor (pickup sending motor) will run and normal play will be disabled.

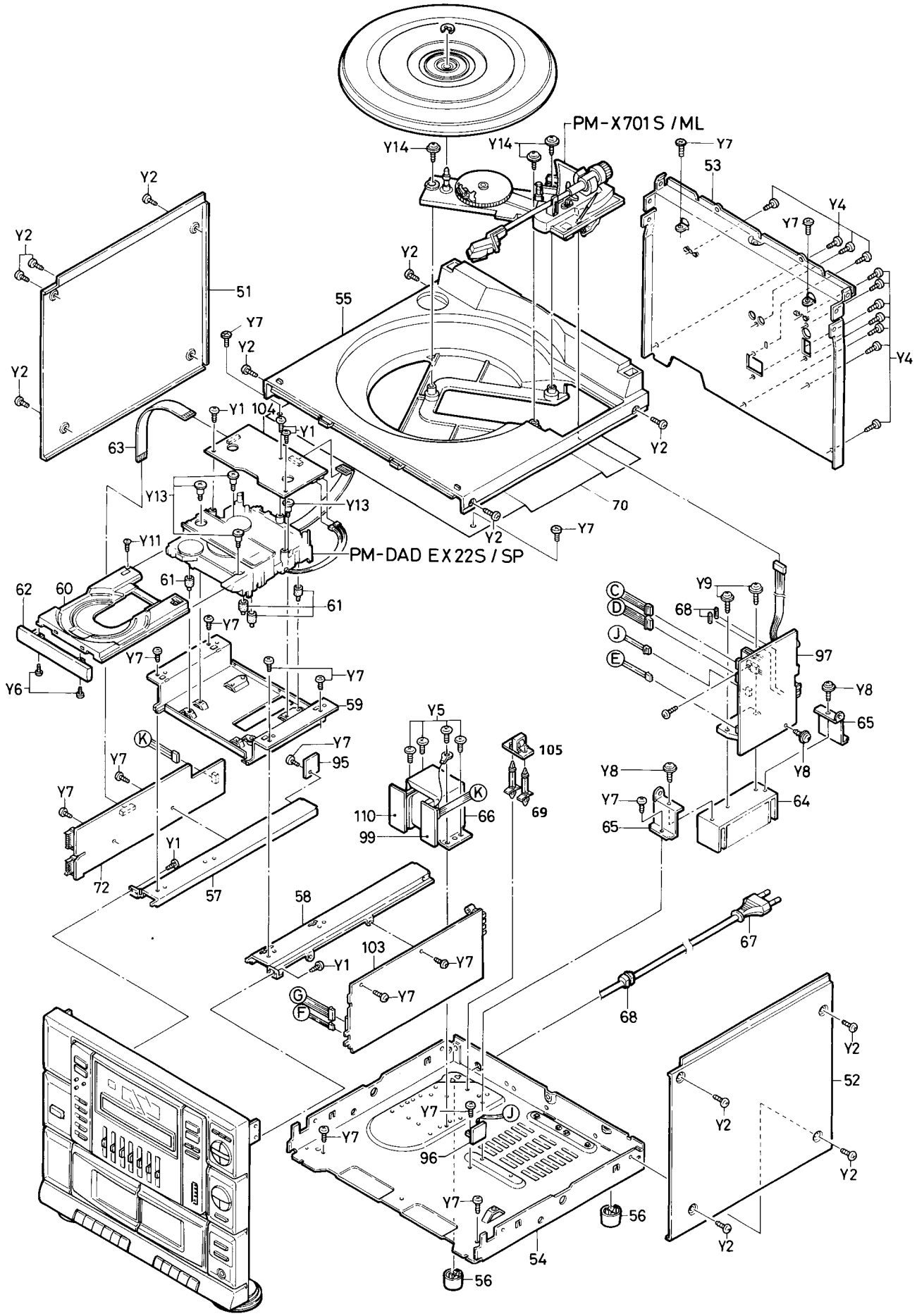
RESET SWITCH

This unit is provided with a reset switch on the rear panel. The reset switch serves to initialize the microprocessor in the unit. If the unit is to be serviced or key input is not acknowledged . operation buttons are pressed, press the RESET switch and initialize the microprocessor following the step below.

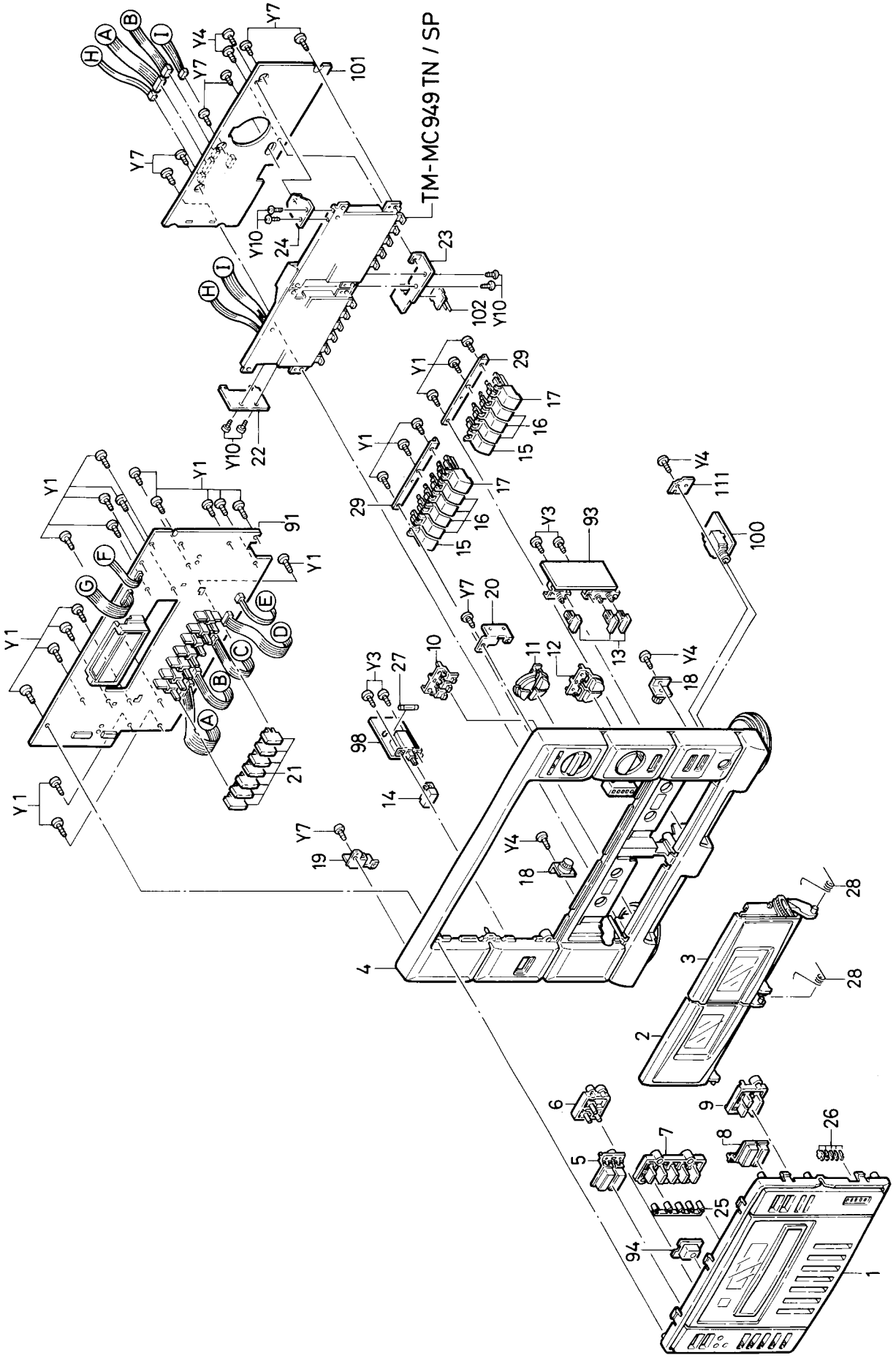
1). Disconnect the AC power cord from the power outlet.
2). Keep the RESET switch depressed for 30 seconds.
(The backed up electrolytic capacitor is discharged by keeping the RESET switch depress.)
3). Reconnect the AC power cord to the power outlet.
4). check the operation of the TUNE and other functions.



EXPLODED VIEW (CABINET)



EXPLODED VIEW (CHASSIS)



PARTS LIST

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified ⚠, 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.

CAUTION: Regular type resistors and capacitors are not list. To know those values, refer to the schematic diagram.

PACKING & ACCESSORIES

Ref. No.	Part No.	Description
	614 241 6464	INNER CARTON
	614 246 0009	PAD, BOTTOM
	614 246 0016	PAD, TOP
	614 245 4589	INNER POLYE COVER, SET
	614 246 0030	PROTECTOR SHEET, RECYCLE MARK
	614 244 0247	INNER POLYE COVER, ACCESSORY
	614 241 6495	INSTRUCTION MANUAL
	614 238 0833	LABEL,BARCODE
	614 231 6832	LABEL,SAFETY, LASER CLASS INDICATE
	614 224 3480	LABEL, NEEDLE(ST-707J)
	614 243 3829	ASSY,COVER,DUST, RECYCLE MARK
	614 243 3959	ASSY,SHEET,TURNTABLE, RECYCLE MARK
	614 112 3479	HINGE,R
	614 112 3486	HINGE,L
	614 245 9348	SHEET, CD TRAY

CABINET & CHASSIS

Ref. No.	Part No.	Description
1	614 239 4205	ASSY,PANEL
2	614 239 4946	ASSY,LID,CASSETTE ,TAPE B
3	614 239 4953	ASSY,LID,CASSETTE ,TAPE A
4	614 239 4199	ASSY,PANEL,FRONT
5	614 239 4540	BUTTON, REPEAT
6	614 239 4564	BUTTON, RANDOM.EDIT
7	614 239 4588	BUTTON, FUNCTION
8	614 239 4533	BUTTON, PLAY
9	614 239 4557	BUTTON, SKIP.OPEN
10	614 239 4526	BUTTON, BAND.MEMO
11	614 239 4571	BUTTON, TUN.PRESET
12	614 240 8902	BUTTON, VOL.
13	614 228 0218	BUTTON, BASS.DOLBY.DUB
14	614 239 4519	BUTTON, POWER
15	614 216 9124	BUTTON, MECHA BUTTON (REC.ETC)
16	614 216 9063	BUTTON, MECHA BUTTON (STOP.ETC)
17	614 216 9117	BUTTON, MECHA BUTTON (PAUSE)
18	614 069 0385	GEAR ASSY
19	614 240 8926	BRACKET-E, FRONT-SIDE (L)
20	614 239 4618	BRACKET-E, FRONT-SIDE (R)
21	614 216 8912	KNOB,SLIDE, EQ.BALANCE
22	614 216 9230	BRACKET-E, DECK PCB
23	614 216 9254	BRACKET-E, DECK PCB
24	614 216 9247	BRACKET-E, DECK PCB
25	614 239 4472	WINDOW, FUNCTION
26	614 239 6063	WINDOW, VOL
28	614 218 0051	SPRING,WIRE, LID CASSETTE
29	614 194 9239	BRACKET, MECHA KNOB

Ref. No.	Part No.	Description
51	614 239 4410	PANEL,SIDE, L
52	614 239 4403	PANEL,SIDE, R
53	614 241 5665	PANEL,REAR
54	614 239 4281	CABINET,BOTTOM
55	614 230 5096	PANEL,TOP, TURN TABLE
56	614 216 7083	ASSY,FOOT
57	614 240 2719	BRACKET-M, CD MECHA BRACKET (L)
58	614 240 2702	BRACKET-M, CD MECHA BRACKET (R)
59	614 240 2726	BRACKET-M, CD MECHA
60	614 238 1694	TABLE,LOADING, CD TRAY
61	614 195 6978	RUBBER CUSHION, CD MECHA
62	614 239 4359	ESCUTCHEON, CD TRAY
64	614 217 4708	HEAT SINK
65	614 218 7715	BRACKET-E, HEAT SINK
68	614 129 1901	FIXER, AC CORD
69	614 129 5558	FIXER, AC LINE FILTER
70	614 239 4670	SHIELD, T.T
	614 232 0464	LABEL,SAFETY, LASER
	614 191 3698	LABEL, LASER PICK UP

FIXING PARTS

Ref. No.	Part No.	Description
Y1	411 021 1806	SCR S-TPG BIN 2.6X10, FRONT BRACKET-M
Y2	411 021 6603	SCR S-TPG BIN 3X8, PANEL SIDE
Y3	411 022 2802	SCR S-TPG FLT 3X10, DOLBY SW
Y4	411 021 3503	SCR S-TPG BIN 3X10, REAR SOCKET
Y5	411 001 3905	SCR S-TPG BIN 4X6, TRANS
Y6	411 021 1202	SCR S-TPG BIN 2X8, TRAY ESCUTCHEON
Y7	411 021 6405	SCR S-TPG BIN 3X8, DECK MECHA
Y8	411 020 9902	SCR S-TPG BRZ+FLG 3X8, HEAT SINK-BRACKET
Y9	411 020 9407	SCR S-TPG BRZ+FLG 3X14, HEAT SINK-POWER IC
Y10	411 028 2905	SCR S-TPG PAN 2X4, DECK BRACKET-E
Y11	411 022 8408	SCR S-TPG PAN 2X8, CD TRAY STOPPER
Y13	412 004 5705	SPECIAL SCREW, CD MECHA FIX
Y14	412 032 6408	SPECIAL SCREW, PLAYER

PARTS LIST

ELECTRICAL PARTS

Ref. No.	Part No.	Description
27	⚠423 016 9704	FUSE 250V 0.5A
63	614 240 8384	CORD, CTL FFC 22P
66	⚠614 241 9472	POWER TRANS
67	⚠614 023 3100	POWER CORD
or	⚠614 203 0493	POWER CORD
or	⚠614 023 3148	POWER CORD
68	⚠423 017 0106	FUSE 250V 1.6A
100	⚠614 245 4305	PCB
111	⚠614 245 4336	PCB
	614 234 5511	LOOP ANTENNA, AM ANT
	614 023 7344	ANT

FRONT PCB ASSY

Ref. No.	Part No.	Description
91	614 245 4121	ASSY,PCB, FRONT
C4420	403 038 4535	ELECT 1000U M 6.3V
CN251	614 035 4997	SOCKET
CN252	614 035 4935	SOCKET
CN253	614 244 1602	ASSY,CONNECTOR-S
CN254	614 244 1596	ASSY,CONNECTOR-S
CN255	614 035 4928	SOCKET
CN503	614 244 0155	SOCKET, TO DECK 9P
CN504	614 211 3202	SOCKET, TO DECK 5P
CN505	614 211 3233	SOCKET, TO MAIN 5P
CN506	614 244 0148	SOCKET, TO MAIN 6P
CN507	614 211 2991	SOCKET, TO MAIN 2C
CN601	614 240 2450	PLUG
CN602	614 226 9978	PLUG
CN603	614 020 6616	SOCKET
CN604	614 020 6579	SOCKET
CN605	614 020 6579	SOCKET
CN606	614 020 6586	SOCKET
CN607	614 020 1222	SOCKET
CN608	614 035 4973	SOCKET
D2501	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
D2502	407 005 4505	DIODE DS442X
D2503	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
D2504	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
D4401	407 036 9203	LED SLP-138C-51-B, PHONO
D4402	407 036 9203	LED SLP-138C-51-B, CD
D4403	407 036 9203	LED SLP-138C-51-B, TUNER
D4404	407 036 9203	LED SLP-138C-51-B, TAPE
D4405	407 036 9203	LED SLP-138C-51-B, VIDEO
D4411	407 039 5905	LED SLP-738F-51-B, LEVEL 1
D4412	407 039 5905	LED SLP-738F-51-B, LEVEL 2
D4413	407 039 5905	LED SLP-738F-51-B, LEVEL 3
D4414	407 039 5905	LED SLP-738F-51-B, LEVEL 4
D4415	407 039 5905	LED SLP-738F-51-B, LEVEL 5
D4420	407 005 4505	DIODE DS442X
or	407 013 7109	DIODE 1S2473
D4421	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D4422	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D4430	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D4431	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D4433	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D4440	407 005 4505	DIODE DS442X
or	407 013 7109	DIODE 1S2473
D4490	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
IC251	410 146 1203	IC UPD75306GF-225-3B9
IC501	409 003 9308	IC BU4051B
IC502	409 053 0409	IC TC9153AP
IC503	409 018 4909	IC LA6458S
IC601	409 003 9308	IC BU4051B
IC900	409 039 9204	IC NJM78L05A
IC901	409 020 0906	IC LB1403N
L2501	614 028 4256	FILTER
LCD01	614 239 1723	LCD
PL251	614 045 9661	LAMP
PL252	614 045 9661	LAMP
Q4401	405 011 8609	TR 2SC1740S-S
Q4402	405 011 8609	TR 2SC1740S-S
Q4410	405 000 2205	TR DTA144ES
Q4411	405 000 2205	TR DTA144ES
Q4412	405 000 2205	TR DTA144ES
Q4413	405 000 6104	TR DTC144ES
Q4414	405 000 6104	TR DTC144ES
Q4415	405 000 6104	TR DTC144ES
Q4416	405 000 6104	TR DTC144ES
Q4417	405 011 8609	TR 2SC1740S-S
Q4418	405 000 6104	TR DTC144ES
Q4419	405 011 8609	TR 2SC1740S-S
Q4420	405 000 3103	TR DTC114ES
Q4421	405 000 3103	TR DTC114ES
Q4422	405 011 8609	TR 2SC1740S-S
Q4501	405 011 8609	TR 2SC1740S-S
Q4502	405 011 8609	TR 2SC1740S-S
Q4601	405 011 8609	TR 2SC1740S-S
Q4602	405 011 8609	TR 2SC1740S-S
S2501	614 220 5655	SWITCH,TACT
S2502	614 220 5655	SWITCH,TACT
S2503	614 220 5655	SWITCH,TACT
S2504	614 220 5655	SWITCH,TACT
S2505	614 220 5655	SWITCH,TACT
S2506	614 220 5655	SWITCH,TACT
S2507	614 220 5655	SWITCH,TACT
S2508	614 220 5655	SWITCH,TACT
S2509	614 220 5655	SWITCH,TACT
S2510	614 220 5655	SWITCH,TACT
S2511	614 220 5655	SWITCH,TACT
S2512	614 220 5655	SWITCH,TACT
S2513	614 220 5655	SWITCH,TACT
S2514	614 220 5655	SWITCH,TACT
S2515	614 220 5655	SWITCH,TACT
S2516	614 220 5655	SWITCH,TACT
S2517	614 220 5655	SWITCH,TACT
S4401	614 220 5655	SWITCH,TACT
S4402	614 220 5655	SWITCH,TACT
S4403	614 220 5655	SWITCH,TACT
S4404	614 220 5655	SWITCH,TACT
S4405	614 220 5655	SWITCH,TACT
S4406	614 220 5655	SWITCH,TACT
S4407	614 220 5655	SWITCH,TACT
VR501	614 240 9923	VR,SLIDE, GEQ
VR502	614 240 9923	VR,SLIDE, GEQ
VR503	614 240 9923	VR,SLIDE, GEQ
VR601	614 240 9923	VR,SLIDE, GEQ
VR602	614 240 9923	VR,SLIDE, GEQ
VR603	614 240 9923	VR,SLIDE, GEQ
VR900	614 240 9930	VR,SLIDE, BALANCE

PARTS LIST

Ref. No.	Part No.	Description
X2501	614 215 5561	RESONATOR,CERAM
	614 239 4656	MOUNT-M
	614 240 8940	SHEET
	614 244 9684	SHEET
	614 241 0998	COVER

CD MICON PCB ASSY

Ref. No.	Part No.	Description
92	614 245 4145	ASSY,PCB, CD MICOM
C1304	403 135 3362	ELECT 1000U M 6.3V
C1609	403 042 6265	ELECT 1000U M 16V
CN106	614 241 6143	SOCKET, FROM MECHA
or	614 243 3218	SOCKET
CN107	614 017 2102	PLUG, AC INPUT
CN108	614 227 0011	SOCKET, TO FRONT
CN109	614 240 2467	SOCKET, TO FRONT
CN110	614 035 4911	SOCKET
CN111	614 017 2096	PLUG
D1301	407 005 4505	DIODE DS442X
or	407 013 7109	DIODE 1S2473
D1361	407 053 6704	ZENER DIODE MTZ5.6B
D1362	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D1601	⚠407 004 9105	DIODE DSF10C
or	⚠407 012 3300	DIODE 1SR35-200A
D1602	⚠407 004 9105	DIODE DSF10C
or	⚠407 012 3300	DIODE 1SR35-200A
D1603	⚠407 004 9105	DIODE DSF10C
or	⚠407 012 3300	DIODE 1SR35-200A
D1604	⚠407 004 9105	DIODE DSF10C
or	⚠407 012 3300	DIODE 1SR35-200A
D1605	407 007 9904	DIODE GMA01
IC103	410 149 9008	IC UPD75112GF-752-3BE, CD UCOM
IC107	⚠409 189 4203	IC M5278D05
IC108	⚠409 040 1105	IC NJM79L05A
ICP10	614 205 2914	IC PROTECTOR ICP-N25
ICP11	614 205 2914	IC PROTECTOR ICP-N25
L1301	614 028 4133	FILTER
Q107	405 033 6805	TR 2SD1468S-S
or	405 021 0600	TR 2SD1012-G-SPA
Q108	405 033 6805	TR 2SD1468S-S
or	405 021 0600	TR 2SD1012-G-SPA
Q111	405 006 1806	TR 2SA933S-R
or	405 006 1905	TR 2SA933S-S
Q112	405 011 8609	TR 2SC1740S-S
or	405 011 8500	TR 2SC1740S-R
Q121	405 011 8609	TR 2SC1740S-S
or	405 011 8500	TR 2SC1740S-R
Q122	405 000 4407	TR DTC124ES
or	405 001 0309	TR RN1203
or	405 078 2800	TR BA1F4M
Q1361	405 006 1806	TR 2SA933S-R
or	405 006 1905	TR 2SA933S-S
Q1362	405 006 1806	TR 2SA933S-R
or	405 006 1905	TR 2SA933S-S
Q1363	405 011 8609	TR 2SC1740S-S
or	405 011 8500	TR 2SC1740S-R
Q1364	405 006 1806	TR 2SA933S-R
or	405 006 1905	TR 2SA933S-S
R1610	⚠402 060 5306	RESISTOR 1 J- 1/2W
R1611	⚠402 060 5306	RESISTOR 1 J- 1/2W
SA01	411 021 6405	SCR S-TPG BIN 3X8
X102	614 215 5523	RESONATOR,CERAM
or	614 215 5561	RESONATOR,CERAM

Ref. No.	Part No.	Description
	⚠614 121 6829	HEAT SINK, FOR IC107
	⚠614 121 5891	HEAT SINK, FOR IC107

BASS SW PCB ASSY

Ref. No.	Part No.	Description
93	614 245 4169	ASSY,PCB, BASS.SW
CN610	614 035 4973	SOCKET
S4410	614 240 8759	SWITCH,PUSH, DUB.BEAT/DOLBY
S4411	614 240 8742	SWITCH,PUSH, BASS EXP.

IR PCB ASSY

Ref. No.	Part No.	Description
94	614 245 4183	ASSY,PCB, IR
CN256	614 035 4928	SOCKET
D2600	407 152 1303	PHOTO DIODE SPS-422-1

RESET PCB ASSY

Ref. No.	Part No.	Description
95	614 245 4206	ASSY,PCB, RESET
CN111	614 035 4911	SOCKET
	614 221 8327	switch,ALL CLEAR

REGULATOR PCB ASSY

Ref. No.	Part No.	Description
96	614 245 4220	ASSY,PCB, REG.
CN510	614 243 9562	ASSY,CONNECTOR-S, TO MAIN SOCKET-LEAD
CN620	614 020 1222	SOCKET
IC950	⚠X409 001 7603	IC AN7812F, MOTOR +B
or	⚠X409 078 2402	IC L7812ML, MOTOR +B
or	⚠X409 122 6202	IC NJM7812FA, MOTOR +B
or	⚠X409 168 2107	IC UPC7812HF, MOTOR +B

AMP PCB ASSY

Ref. No.	Part No.	Description
97	614 245 3919	ASSY,PCB
C761	403 057 3830	POLYESTER 0.1U M 50V
C762	403 057 3830	POLYESTER 0.1U M 50V
C774	403 062 4403	POLYESTER 5600P J 50V
C861	403 057 3830	POLYESTER 0.1U M 50V
C862	403 057 3830	POLYESTER 0.1U M 50V
C874	403 062 4403	POLYESTER 5600P J 50V
C942	403 053 4435	ELECT 2200U M 35V
C954	403 053 4435	ELECT 2200U M 35V
C965	403 053 4435	ELECT 2200U M 35V
C992	403 062 4423	POLYESTER 5600P J 50V
CN701	614 017 2126	PLUG, PRI
CN702	614 017 2133	PLUG, PRI
CN703	614 017 2102	PLUG, AMP IN
CN707	614 035 2702	SOCKET, VIDEO
CN708	614 218 0068	TERMINAL, SP
CN720	614 017 2102	PLUG, REG.
CN731	614 020 6555	SOCKET
CN831	614 211 3103	SOCKET, TO CD V-CHECK
D951	⚠407 012 3300	DIODE 1SR35-200A, D951
D952	⚠407 012 3300	DIODE 1SR35-200A, D952
D953	⚠407 012 3300	DIODE 1SR35-200A, D953
D954	⚠407 012 3300	DIODE 1SR35-200A, D954
D955	⚠408 007 9307	DIODE 1SR35-200A-HP, D955
D956	⚠408 007 9307	DIODE 1SR35-200A-HP, D956
D957	⚠408 007 9307	DIODE 1SR35-200A-HP, D957
D958	⚠408 007 9307	DIODE 1SR35-200A-HP, D958
D962	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D965	407 007 9904	DIODE GMA01, D965

PARTS LIST

Ref. No.	Part No.	Description
or	407 012 4406	DIODE 1SS133, D965
D966	407 007 9904	DIODE GMA01, D966
or	407 012 4406	DIODE 1SS133, D966
IC750	⚠409 101 8302	IC STK4112MK2, IC750
IC751	409 016 7902	IC LA3161, IC751
IC951	⚠409 001 7603	IC AN7812F, IC951
or	⚠409 078 2402	IC L7812ML, IC951
or	⚠409 122 6202	IC NJM7812FA, IC951
or	⚠409 168 2107	IC UPC7812HF, IC951
Q750	405 012 2002	TR 2SC1815-GR
or	405 011 8609	TR 2SC1740S-S
or	405 020 7204	TR 2SC945A-K
Q850	405 012 2002	TR 2SC1815-GR
or	405 011 8609	TR 2SC1740S-S
or	405 020 7204	TR 2SC945A-K
Q952	405 012 2002	TR 2SC1815-GR, Q952
or	405 020 7204	TR 2SC945A-K, Q952
R752	401 024 8021	CARBON 1M JA 1/6W, R752
R973	402 023 1703	FUSIBLE RES 100 J- 1/4W, R973
R974	402 023 1703	FUSIBLE RES 100 J- 1/4W, R974
SA01	411 021 6405	SCR S-TPG BIN 3X8
	614 244 9639	ASSY,CONNECTOR-S, TO PHONO
	614 020 1246	SOCKET, PHONO AC HP
	⚠614 208 4540	FUSE HOLDER, SP
	614 203 7362	HEAT SINK

SWITCH PCB ASSY

Ref. No.	Part No.	Description
98	614 245 3926	ASSY,PCB
S901	⚠614 018 8967	SWITCH, S901
	⚠614 208 4540	FUSE HOLDER

LINE FILTER PCB ASSY

Ref. No.	Part No.	Description
105	614 245 3971	ASSY,PCB,LINE FILTER
or	614 017 8203	TERMINAL BOARD
	614 123 2089	TERMINAL
	614 213 5761	INDUCTION FELITE

PT SEC. PCB ASSY

Ref. No.	Part No.	Description
99	614 245 3940	ASSY,PCB
C975	403 057 3830	POLYESTER 0.1U M 50V
C976	403 057 3830	POLYESTER 0.1U M 50V
C977	403 057 3830	POLYESTER 0.1U M 50V
CN709	614 020 1246	SOCKET, CN709 MAIN
CN710	614 020 6555	SOCKET, FOR CD
CN721	614 226 9213	SOCKET, TO CD FOR AC
R960	⚠402 044 8804	RESISTOR 0.22 J- 1W, R960
	614 051 9808	LUG

HEADPHONE PCB ASSY

Ref. No.	Part No.	Description
100	614 245 3957	ASSY,PCB
CN704	614 020 1246	SOCKET, CN704 MAIN
CN712	614 035 1712	SOCKET, HEAD PHONE
R762	401 018 2503	CARBON 330 JB 1/4W
R862	401 018 2503	CARBON 330 JB 1/4W

Ref. No.	Part No.	Description
105	614 245 3971	ASSY,PCB
L901	⚠614 213 5761	INDUCTOR,FERITE
	⚠614 017 8203	TERMINAL BOARD
	⚠614 123 2089	TERMINAL

DECK PCB ASSY

Ref. No.	Part No.	Description
101	614 244 4511	ASSY,PCB, DECK
C985	403 081 1229	POLYPRO 0.018U J 100V, C985
CN001	614 017 2102	PLUG, AUTO TAPE
CN002	614 017 2133	PLUG, MECHA
CN005	614 016 4084	PLUG, HIGH SPEED
CN006	614 020 8849	SOCKET, TAPE OUT
CN007	614 020 6562	SOCKET, MOTOR
CN008	614 020 6548	SOCKET, CN008 STOP SW
CN009	614 223 0329	ASSY,CONNECTOR-S, CN009 A MECHA
CN010	614 223 0336	ASSY,CONNECTOR-S, CN010 B MECHA
CN717	614 017 2126	PLUG
CN718	614 017 2164	PLUG
D001	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D002	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D003	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D004	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D005	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D006	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D007	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D008	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D009	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D010	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D011	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D012	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D013	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D014	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D015	407 005 4505	DIODE DS442X
or	407 013 7109	DIODE 1S2473
D016	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D017	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D018	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D019	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D099	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D501	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D502	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133

PARTS LIST

Ref. No.	Part No.	Description
D601	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D602	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
IC001	409 020 9107	IC LC4069UB
or	409 051 3907	IC TC4069UBP
or	409 059 3206	IC UPD4069UBC
IC501	409 121 8702	IC LA3246
IC502	409 145 8405	IC UPC1330HA
IC521	409 016 8701	IC LA3220
IC551	409 119 9803	IC CXA1101P
L501	614 029 3807	MX COIL
L502	614 027 8545	CHOKE
or	614 210 3685	INDUCTOR,FERITE
L511	614 202 8865	FILTER
L512	614 029 3142	MX COIL
L601	614 029 3807	MX COIL
L602	614 027 8545	CHOKE
or	614 210 3685	INDUCTOR,FERITE
L611	614 202 8865	FILTER
L612	614 029 3142	MX COIL
L981	614 212 0804	TRANS,OSC
Q001	405 001 7001	TR 2SA1015-GR
or	405 005 2002	TR 2SA733-P
Q002	405 001 7001	TR 2SA1015-GR
or	405 005 2002	TR 2SA733-P
Q003	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q004	405 001 7001	TR 2SA1015-GR
or	405 005 2002	TR 2SA733-P
Q005	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q006	405 012 7403	TR 2SC2001-K
or	405 013 1301	TR 2SC2120-Y
Q008	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q009	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q010	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q501	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q502	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q504	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q505	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q506	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q507	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q508	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q509	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q510	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q601	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q602	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q604	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q605	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q606	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q607	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q608	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q609	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q981	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q982	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q983	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q984	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q985	405 011 1907	TR 2SC1627-Y
SV001	614 204 1871	SEMI V.R, SVR001
SV501	614 003 6183	SEMI V.R, SVR501 601 502 602
SV502	614 003 6183	SEMI V.R, SVR501 601 502 602
SV503	614 003 6183	SEMI V.R, SVR503 603
SV504	614 003 6237	SEMI V.R, SVR504 604
SV601	614 003 6183	SEMI V.R, SVR501 601 502 602
SV602	614 003 6183	SEMI V.R, SVR501 601 502 602
SV603	614 003 6183	SEMI V.R, SVR503 603
SV604	614 003 6237	SEMI V.R, SVR504 604
	X614 130 6926	TUBE, FOR R981 20X2

STOP SW PCB ASSY

Ref. No.	Part No.	Description
102	614 244 6676	ASSY,PCB, STOP SW
CN058	614 020 6548	SOCKET, CN058 TOP SW
	614 203 7911	SWITCH, STOP SW

PARTS LIST

TUNER MAIN PCB ASSY

Ref. No.	Part No.	Description
103	614 241 7676	ASSY,PCB, TU MAIN
C2152	403 082 0231	POLYPRO 470P J 100V
C2155	403 082 2235	POLYPRO 560P J 100V
C2304	403 080 5010	POLYPRO 1000P J 100V
C2458	403 106 1613	NP-ELECT 1U Q 50V
CF201	614 240 2917	FILTER,CERAM
CF202	614 240 2917	FILTER,CERAM
CF204	614 211 2939	FILTER
CF205	614 030 7443	I.F FILTER
CN201	614 210 2688	TERMINAL
CN241	614 017 2614	PLUG
CN242	614 017 2553	PLUG
CT251	614 007 6332	TRIMMER
CT252	614 007 6356	TRIMMER
D2151	407 091 5004	VARACTOR DI SVC321SPA-C-2
D2152	407 091 5004	VARACTOR DI SVC321SPA-C-2
D2201	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
D2301	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
D2302	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
D2451	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
IC201	409 195 3108	IC LA1265-AUD
IC202	409 016 9500	IC LA3361
IC203	409 066 7600	IC LM7001
L2151	614 216 1029	TRANS,RF
L2152	614 032 8059	ANT COIL
L2153	614 239 7268	TRANS,OSC
L2154	614 239 7275	TRANS,OSC
L2201	614 028 4379	FILTER
L2451	614 028 4256	FILTER
Q2105	405 012 5904	TR 2SC1923-Y
Q2131	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q2152	405 016 2206	TR 2SC2878-A
or	405 016 2305	TR 2SC2878-B
Q2153	405 016 2206	TR 2SC2878-A
or	405 016 2305	TR 2SC2878-B
Q2154	405 016 2206	TR 2SC2878-A
or	405 016 2305	TR 2SC2878-B
Q2155	405 016 2206	TR 2SC2878-A
or	405 016 2305	TR 2SC2878-B
Q2156	405 016 2206	TR 2SC2878-A
or	405 016 2305	TR 2SC2878-B
Q2157	405 114 8506	TR 2SK193-ML
or	405 114 8407	TR 2SK193-LL
Q2158	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q2201	405 018 7902	TR 2SC380TM-O
Q2202	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q2203	405 001 7001	TR 2SA1015-GR
Q2301	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q2302	405 067 0800	TR RN2207
or	405 078 2404	TR BN1A4P
or	405 000 0904	TR DTA114YS
Q2351	405 067 0800	TR RN2207
or	405 078 2404	TR BN1A4P
or	405 000 0904	TR DTA114YS
Q2352	405 067 0800	TR RN2207
or	405 078 2404	TR BN1A4P
or	405 000 0904	TR DTA114YS
Q2354	405 067 0800	TR RN2207
or	405 078 2404	TR BN1A4P
or	405 000 0904	TR DTA114YS
Q2355	405 067 0800	TR RN2207
or	405 078 2404	TR BN1A4P
or	405 000 0904	TR DTA114YS
Q2451	405 114 1903	TR 2SC1815(L)-Y
or	405 114 1804	TR 2SC1815(L)-GR
Q2452	405 114 1903	TR 2SC1815(L)-Y
or	405 114 1804	TR 2SC1815(L)-GR
Q2461	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q2701	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q2702	405 016 2206	TR 2SC2878-A
or	405 016 2305	TR 2SC2878-B
Q2801	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q2802	405 016 2206	TR 2SC2878-A
or	405 016 2305	TR 2SC2878-B
Q2901	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
SVR23	614 204 1901	SEMI V.R
T2202	614 030 4114	I.F.T
T2203	614 029 3906	MX COIL
T2701	614 027 7845	CHOKE
T2801	614 027 7845	CHOKE
TU201	614 241 7447	TUNER
X2451	614 240 1118	RESONATOR
or	614 234 0486	RESONATOR
	614 234 1728	TERMINAL

CD MECHANISM PCB ASSY

Ref. No.	Part No.	Description
104	614 240 7950	ASSY,PCB
CN101	614 227 7935	SOCKET, FOR PICK FFC
CN102	614 017 3833	PLUG, FOR MOTOR FFC
CN103	614 017 3826	PLUG, FOR MOTOR FFC
CN104	614 035 2061	SOCKET, FOR CTL
IC101	409 245 4802	IC LA9210M, SSP
IC102	⚠409 247 0000	IC LA6524, PICK ACT MOTOR DRV
IC104	409 248 8708	IC LC7866E, DSP
IC105	409 206 9006	IC LC97000P-288, DAC
or	409 262 1709	IC LC7883KM
IC106	409 241 5506	IC XRA15218F, BUFF
or	409 192 7109	IC BA15218F
PCB11	⚠614 240 8124	PCB, MECHA
Q101	405 002 0308	TR 2SA1037K-R, LASER DRV
Q102	405 014 4509	TR 2SC2412K-R
Q105	405 014 4509	TR 2SC2412K-R, DAC VREF REG
SVR11	614 223 1906	POTENTIOMETER, SVR101 FOR T.BAL
TP101	614 227 6839	TERMINAL, RF
TP102	614 227 6839	TERMINAL, FE
TP103	614 227 6839	TERMINAL, TE
TP104	614 227 6839	TERMINAL, GND
TP105	614 227 6839	TERMINAL, PLL
X101	614 236 1818	RESONATOR

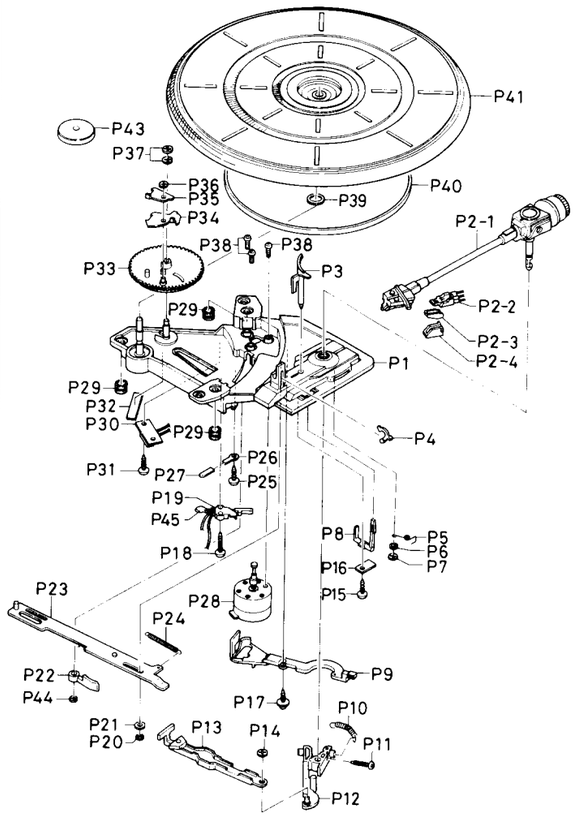
REMOTE CONTROL ASSY

Ref. No.	Part No.	Description
		RB-X200/SS.SP
	614 245 9874	ASSY,REMOCON
	614 236 0132	POLY COVER

PARTS LIST & EXPLODED VIEW

TURNTABLE MECHANISM (PM-X701S/ML)

Ref. No.	Part No.	Description
P1	614 120 0118	SPACER,45 ADAPTOR
P2	411 001 0508	RING E 6,
P4	614 225 8866	TURNTABLE,
P5	614 225 8835	GEAR,CENTER GEAR
P6	412 037 6700	SPECIAL WASHER,TURNTABLE
P7	614 225 8873	BELT,FLAT
P8	412 037 6809	SPECIAL WASHER
P9	614 225 8941	LEVER,TRIP POWL
P10	614 225 8965	LEVER,TRIP CLUTCH
P11	412 029 9702	SPECIAL WASHER
P12	614 225 8842	GEAR
P13	614 225 8248	ASSY,SLIDE
P14	614 225 8217	ASSY,CHASSIS
P15	614 201 8385	SPRING COIL
P16	614 225 9009	LEVER,TRIP LEVER
P17	614 202 0920	SWITCH
P18	411 022 7807	SCR S-TPG PAN 2X6
P19	411 023 4003	SCR S-TPG PAN 3X10
P20	614 225 9085	SPRING,TENS
P21	411 002 7209	SCR PAN 3X16
P22	614 225 9016	LEVER
P24	614 225 9146	SWITCH,SLIDE,45/33
or	614 225 8811	CLAMP,ARM ROCK
P25	614 225 8781	CUSHION,RUBBER
P26	614 225 8170	ASSY,MOTOR
P28	614 225 8590	CHASSIS
P30	412 037 1002	SPECIAL SCREW,MOTOR FIX
P31	614 225 8910	LIFTER
P32	614 225 9023	ROD,CUE ROD
P33	614 225 8514	KNOB,CUE KNOB
P44	614 225 8774	CUSHION,RUBBER
P45	614 230 6499	ROD
P46	614 225 8804	FIXER
P47	411 022 7807	SCR S-TPG PAN 2X6



P.C.BOARD ASSY

Ref. No.	Part No.	Description
P23	614 225 8163	ASSY,PCB
	614 006 9655	VR,10K
	614 016 8105	PLUG,5P

TONE ARM ASSY

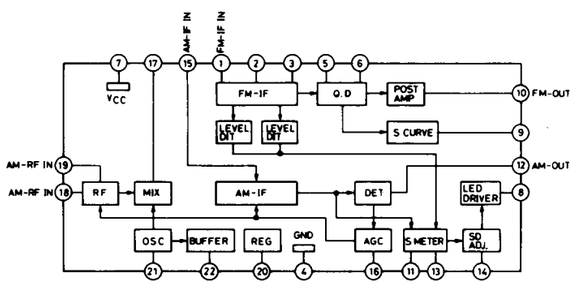
Ref. No.	Part No.	Description
	614 225 8231	ASSY,TONEARM
P34	614 225 8798	HOLDER
P35	614 225 8675	SHAFT
P36	614 225 9092	SPRING,TENSION
P37	411 022 9900	SCR S-TPG PAN 2.3X5
P38	614 225 8743	SUPPORT
P39	614 225 9061	PIPE
P40	614 225 8934	HEAD SHELL
P41	614 225 8736	LUG
P42	614 226 1057	ASSY,WIRE
P43	614 225 9115	CARTRIDGE
	614 001 7779	NEEDLE CARTRIDGE

PARTS LIST

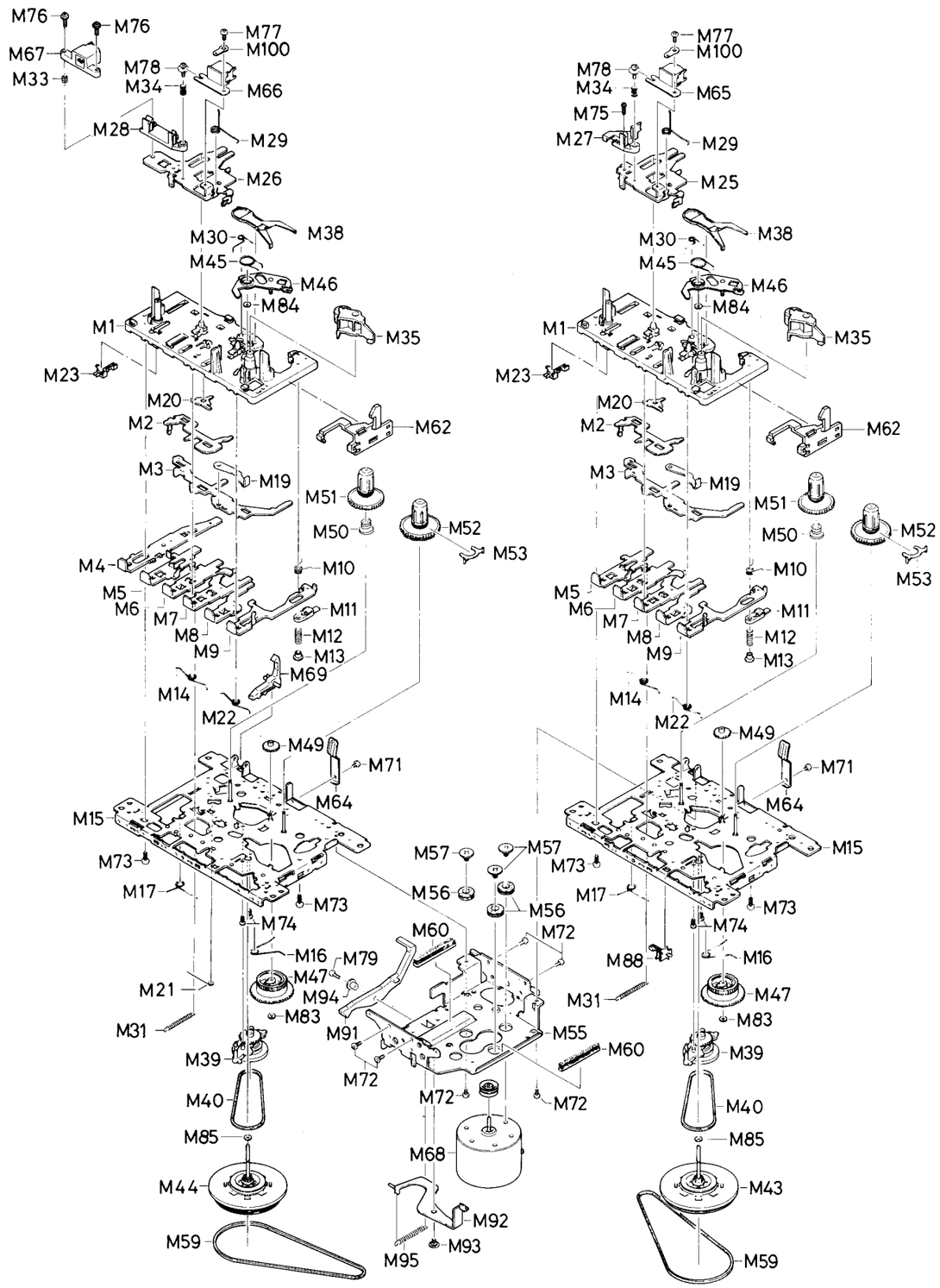
TAPE MECHANISM (TM-MC949TN/SP)

Ref. No.	Part No.	Description
M1	614 067 3258	SUB CHASSIS ASSY,BASE ASSY
M2	614 201 1744	SLIDE,SWITCH ACTUATOR
M3	614 201 1737	SLIDE,PUSH BUTTON ACTUATOR
M4	614 196 0500	LEVER,REC BUTTON LEVER
M5	614 196 0555	LEVER,PLAY BUTTON LEVER
M6	614 196 0517	LEVER,REW BUTTON LEVER
M7	614 196 0524	LEVER,FF BUTTON LEVER
M8	614 196 0531	LEVER,STOP BUTTON LEVER
M9	614 208 0313	LEVER,PAUSE BUTTON LEVER
M10	614 152 1244	SPRING WIRE,P CONTROL SPRING
M11	614 208 0320	LEVER,PAUSE LEVER (E)
M12	614 151 7186	SPRING COIL,PAUSE LEVER SPRING
M13	614 129 0669	BOSS,PAUSE STOPPER
M14	614 152 1251	SPRING WIRE,BUTTON LEVER SPRING(A)
M15	614 067 2770	CHASSIS ASSY,CHASSIS ASSY
M16	614 152 1275	SPRING WIRE,E ACTUATOR SPRING
M17	614 152 1282	SPRING WIRE,P.S LEVER SPRING
M19	614 140 1539	LEVER,E KICK LEVER
M20	614 129 0676	BOSS,PR STOPPER
M21	614 152 1305	SPRING WIRE,REC BUTTON LEVER SPRING
M22	614 152 1268	SPRING WIRE,BUTTON LEVER SPRING(B)
M23	614 024 1693	SWITCH,LEAF SWITCH MSW-1541F
M24	614 151 4703	SPRING COIL,PLAY BUTTON LEVER SP (S)
M25	614 211 6944	SLIDE,HEAD PANEL
M26	614 210 6822	SLIDE,HEAD PANEL
M27	614 146 5111	BRACKET TAPE GUIDE,HEAD BASE
M28	614 196 0470	BRACKET HEAD,HEAD BASE
M29	614 210 3432	SPRING WIRE,PANEL(P)SPRING
M30	614 152 1299	SPRING WIRE,M CONTROL SPRING
M33	614 151 5090	SPRING COIL,EH SPRING
M34	614 151 7162	SPRING COIL,AZIMUTH SPRING
M35	614 210 3302	LEVER PINCH ROLLER ASSY,PINCH ROLLER ARM ASSY
M38	614 140 1614	LEVER,SENSING LEVER
M39	614 069 2273	PULLEY ASSY,RF CLUTCH ASSY
M40	614 195 5087	SQUARE BELT,RF BELT
M43	614 204 8672	FLYWHEEL ASSY,FLYWHEEL ASSY
M44	614 068 1871	FLYWHEEL DISK ASSY,FLYWHEEL ASSY
M45	614 151 8312	SPRING PLATE,GEAR PLATE SPRING
M46	614 070 0916	LEVER ASSY,GEAR PLATE ASSY
M47	614 134 9053	GEAR,CAM GEAR
M49	614 134 9046	GEAR,FF GEAR
M50	614 205 1337	SPRING COIL,BACK TENSION SPRING
M51	614 211 3868	REEL ASSY,SUPPLY REEL ASSY
M52	614 211 3875	REEL ASSY,TAKE UP REEL ASSY
M53	614 195 5094	LEVER,SENSER
M55	614 122 9553	BRACKET MOTOR,MOTOR BRACKET
M56	614 126 6831	CUSHION,MOTOR RUBBER
M57	412 026 1907	SPECIAL SCREW,MOTOR COLLAR SCREW
M59	614 133 4127	SQUARE BELT,MAIN BELT
M60	614 126 6848	CUSHION,ANTI VIBRATION FELT MAT
M62	614 140 1522	LEVER,EJECT SLIDE LEVER
M64	614 151 8299	SPRING PLATE,PACK SPRING
M65	614 208 4069	HEAD,PLAY,P.HEAD
M66	614 209 4052	HEAD,R/P,R.P.HEAD
M67	614 021 8831	MAGNETIC HEAD,E.HEAD
M68	614 211 3752	COMMUTATE MOTOR ASSY
M69	614 140 1508	LEVER,RECORD SAFETY LEVER
M71	412 026 1402	SPECIAL SCREW,C TAPPING SCREW M2X3
M72	412 026 2003	SPECIAL SCREW,C TAPPING SCREW M2X4
M73	412 026 2201	SPECIAL SCREW,P TAPP BING SCREW M2X5
M74	412 026 2300	SPECIAL SCREW,CAMERA TAPP M2X4.5
M75	412 026 1501	SPECIAL SCREW,SCREW M2X6
M76	412 036 8200	SPECIAL SCREW,+- CUP SCREW M2X7.5
M77	412 031 6607	SPECIAL SCREW,(+)BIND SCREW M2X3
M78	412 026 1709	SPECIAL SCREW,AZIMUTH SCREW M2X7
M79	412 031 7901	SPECIAL SCREW,C TAPPING SCREW M2X6
M80	614 124 4594	ORDER SCREW,+C TAPP 2X5
M81	412 023 0903	SPECIAL SCREW,+C TAPP 2X5
M83	412 013 5000	SPECIAL WASHER,P WASHER CUT 1.2X3 8X0.3
M84	412 026 1808	SPECIAL WASHER,PW CUT 1.45X3.8X0.5
M85	412 013 8902	SPECIAL WASHER,PW 2X3.5X0.3
M87	614 196 9756	SWITCH,REC SW
M88	614 195 4424	SWITCH,LEAF SWI MSW-17820MVDO
M89	614 209 3849	SWITCH,LEAF,LEAF SW MSW-1664
M91	614 140 1676	LEVER,P KICK LEVER(B)
M92	614 139 8679	LEVER,P KICK LEVER(A)
M93	412 005 8101	SPECIAL SCREW,PK COLLAR SCREW(A)
M94	614 129 0683	BOSS,COLLAR(B)
M95	614 151 4758	SPRING COIL,P KICK LEVER SPRING
M97	614 197 0219	LEVER,SW LEVER
M98	614 197 0202	BOSS,SW LEVER COLLER
M100	614 208 0276	LUG,LUG

IC210 LA1265 (TUNER SYSTEM)



EXPLODED VIEW (DECK MECHANISM)



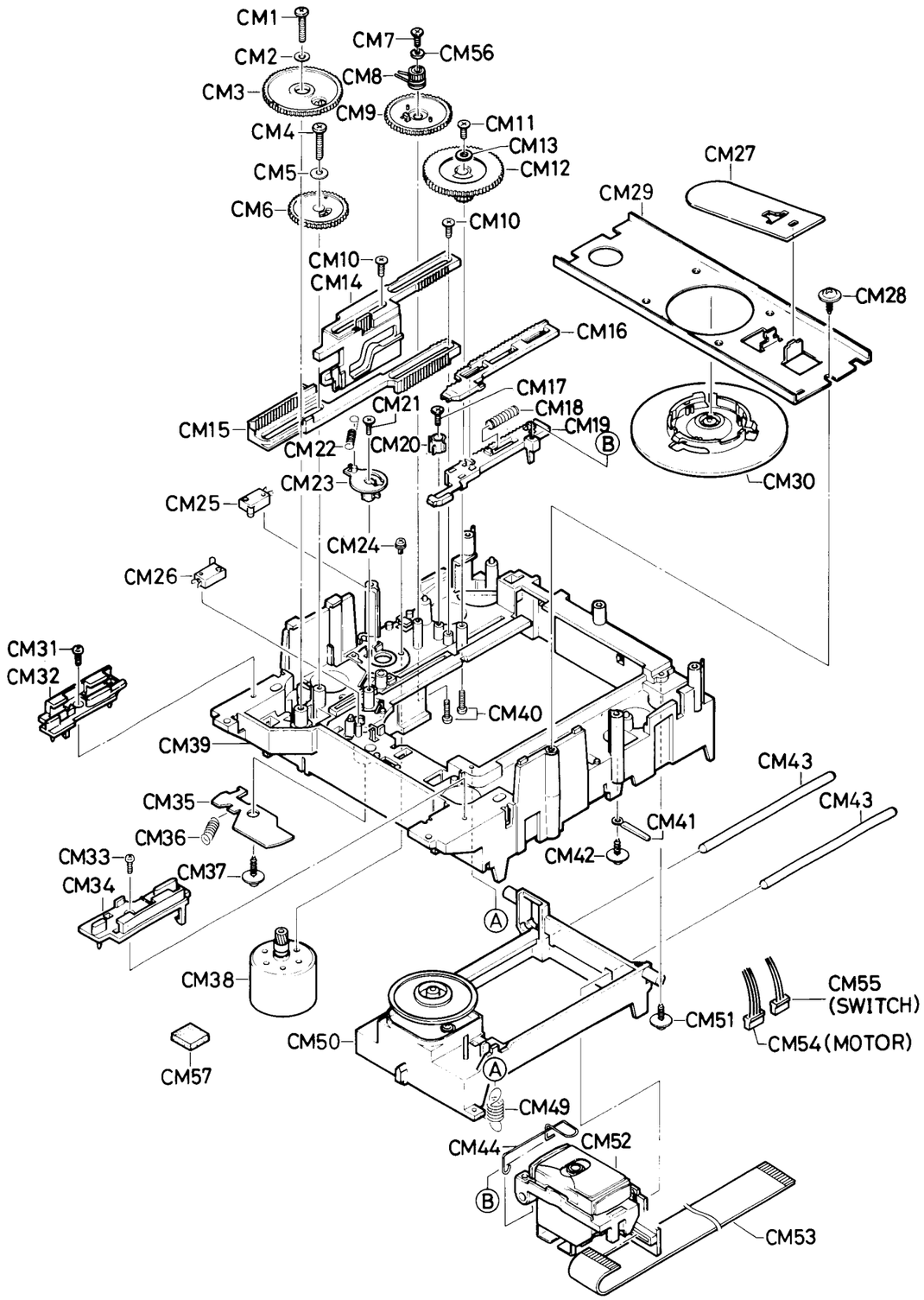
PARTS LIST (CD MECHANISM)

CD MECHANISM (PM-DAD EX22S / SP)

Ref. No.	Part No.	Description
CM01	411 119 8908	SCR S-TPG PAN 2X14,GEAR FIX
CM02	411 087 4704	WASHER V 2X6X0.4,GEAR FIX
CM03	614 224 2056	GEAR TRAY MOVE
CM04	411 119 8908	SCR S-TPG PAN 2X14,GEAR FIX
CM05	411 087 4704	WASHER V 2X6X0.4,GEAR FIX
CM06	614 224 2049	GEAR,TRAY
CM07	411 152 4301	SCR S-TPG PAN PCS 1.7X6, GEAR FIX
CM08	614 237 9172	ASSY,GEAR,CLUTCH INNER
CM09	614 238 4794	GEAR,CLUTCH OUTER
or	614 243 6455	GEAR,CLUTCH OUTER
CM10	412 031 2104	SPECIAL SCREW,SLIDE FIX
CM11	411 152 4301	SCR S-TPG PAN PCS 1.7X6, GEAR FIX
CM12	614 224 1998	GEAR,PICK SLED
CM13	412 045 4101	SPECIAL WASHER,PICK GEAR
CM14	614 233 6311	SLIDE,BASE UP/DOWN
CM15	614 224 2094	SLIDE,TRAY
CM16	614 224 2018	GEAR,PICK RACK UPPER
CM17	412 031 2104	SPECIAL SCREW,GEAR FIX
CM18	614 225 0884	SPRING,COMP,RACK BACK
CM19	614 224 2001	GEAR,PICK RACK LOWER
CM20	614 224 2032	GEAR,BASE/TRAY TIMING
CM21	412 031 2104	SPECIAL SCREW,GEAR FIX
CM22	614 242 8665	SPRING,TENS,GEAR TENSION
CM23	614 237 8304	GEAR,TIMING
CM24	411 044 7205	SCR PAN+SW 2X4,SLED MOTOR
CM25	614 018 9223	SWITCH,LIMIT
CM26	614 018 9223	SWITCH,TRAY OPEN
CM27	614 202 5277	SPRING PLATE,CHUCKING
CM28	411 020 9803	SCR S-TPG BRZ+FLG 3X6, CHUCK BRACKET
CM29	614 224 1967	BRACKET-M,CHUCKING
CM30	614 243 2594	ASSY,PULLEY

Ref. No.	Part No.	Description
CM31	411 022 7807	SCR S-TPG PAN 2X6,BRACKET
CM32	614 224 3176	BRACKET-M,TRAY GUIDE(L)
CM33	411 022 7807	SCR S-TPG PAN 2X6,BRACKET
CM34	614 224 3183	BRACKET-M,TRAY GUIDE(R)
CM35	614 233 6304	LEVER,BASE
CM36	614 226 5536	SPRING,COMP,BASE LEVER MOVE
CM37	411 020 9902	SCR S-TPG BRZ+FLG 3X8,LEVER
CM38	614 225 4820	ASSY,MOTOR,LOADING/SLED
CM39	614 228 5855	CHASSIS,LOADING CHASSIS
or	614 242 8641	CHASSIS,LOADING CHASSIS
CM40	412 031 2104	SPECIAL SCREW,REINFORCEMENT
CM41	614 129 9136	LUG,WIRE DRESS
CM42	411 021 5705	SCR S-TPG BIN 3X6,LUG FIX
CM43	614 230 0411	SHAFT,PICK RAIL
CM44	614 229 4529	SPRING,WIRE,PICK BACK
CM49	614 228 5084	SPRING,TENS,BASE CHASSIS PULL UP
CM50	614 247 1950	ASSY,CHASSIS,W/SPINDLE MOTOR+TURNTABLE
CM51	411 020 9803	SCR S-TPG BRZ+FLG 3X6,BASE CHASSIS FIX
CM52	614 239 1303	PICKUP,LASER,PLASTIC (SF-P1PS)
or	614 231 6047	PICKUP,LASER,ALMINUM (SF-90PS)
CM53	614 232 2062	CORD,13P,PICK UP
CM54	614 246 2959	ASSY,CONNECTOR-S,4P,
or	614 246 2966	SPINDLE/SLED MOTOR
CM55	614 246 2973	ASSY,CONNECTOR-S,3P,
or	614 246 2980	LIMIT/TRAY OPEN SWITCH
CM56	412 014 2800	SPECIAL WASHER,GEAR FIX
CM57	614 125 6528	CUSHION,MOTOR LEAD FIX

EXPLODED VIEW (CD MECHANISM)



IC BLOCK DIAGRAM

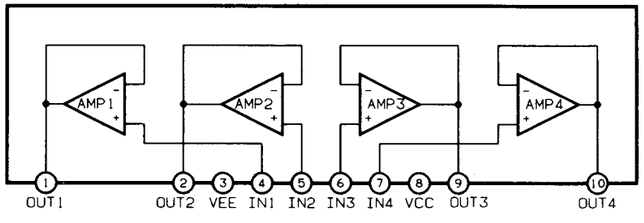
CD SECTION

IC101 LA9210M (Servo Signal Processor)

No.	PIN NAME	I/O	FUNCTION
1	NC		Non Connection
2	VEE		-5V
3	E	I	IV Convert Input (from Photo Diode E)
4	F	I	IV Convert Input (from Photo diode F)
5	FN	I	IV Converter Input
6	FO	O	IV Converter Output
7	TEAO	O	Tracking Error Amplifier Output
8	VREF2	I	Reference Voltage 2
9	VREF3	I	Reference Voltage 3
10	TES1	I	Test Input
11	ATSC	I	+ Input of Anti Shock Detect Amplifier
12	ATSC-	I	- Input of Anti Shock Detect Amplifier
13	TPA+	I	- Input of Tracking Pulse Amplifier
14	TPA-	I	+ Input of Tracking Pulse Amplifier
15	TPAO	O	Tracking Pulse Amplifier Output
16	TOFS	I	Input for Tracking Offset
17	THDS	I	Tracking Servo Hold Switch
18	TD+	I	Add the Track Jump Pulse
19	JPO	O	Track Jump Pulse Amplifier Output
20	SLEQ	I	Input for Sled Servo Equalizer
21	TDO	O	Tracking Actuator Coil Driver Output
22	FDO	O	Focus Actuator Coil Driver Output
23	FD-	I	Input for Focus Actuator Coil Driver
24	FSW	I	Focus Servo Switch
25	NC		Non Connection
26	FEAO	O	Focus Error Amplifier Output
27	FE+	I	+ Input of Focus Error Amplifier
28	FD+	I	+ Input of Focus Actuator Coil Driver
29	SPO	O	CLV Error Amplifier Output
30	SPO-	I	Input for Spindle Motor Driver
31	SPDO	O	Spindle Motor Driver Output
32	VEE		-5V
33	SLDO	O	Sled Motor Driver Output
34	SL-	I	- Input of Sled Motor Driver
35	SL+	I	+ Input of Sled Motor Driver
36	VCC		+5V
37	SLSW	I	Sled Servo Switch
38	DEFO	O	Defect Signal Output
39	2FREQ	I	Input for VCO
40	DRF	O	Focusing Servo ON : High Level

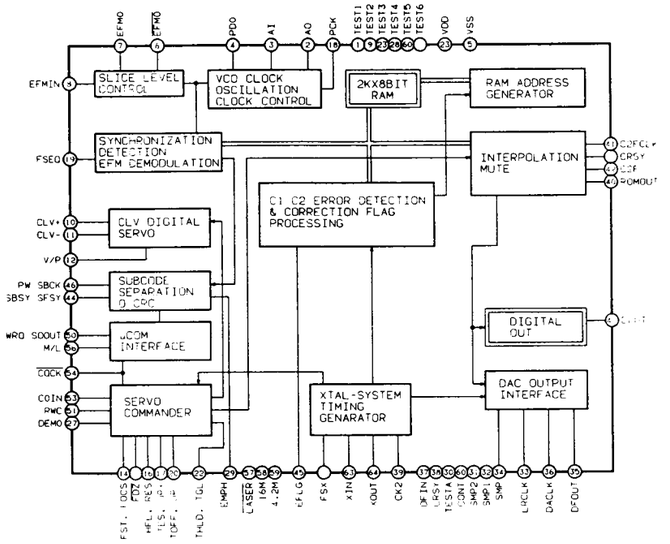
No.	PIN NAME	I/O	FUNCTION
41	NC		Non Connection
42	JP-	I	- Input of Track Jump Pulse Amplifier
43	JP+	I	+ Input of Track Jump Pulse Amplifier
44	THLD	I	Hold of Output Voltage of Tracking Servo
45	TGL	I	Tracking Gain Low
46	TOFF	I	Input For Off the Tracking Servo
47	TES	O	Tracking Error Signal
48	HFL	O	Detect Track Signal
49	FZD	O	Detect S Carve of Focus Error Signal
50	FOCS	I	Input For Off the Focus Servo
51	CLV-	I	- Input of CLV Error Amplifier
52	CLV+	I	+ Input of CLV Error Amplifier
53	SLCO	O	Slice Level Control Amplifier Output
54	$\overline{\text{EFMO}}$	I	$\overline{\text{EFMO}}$ (RF) Signal
55	AI	I	EFMO (RF) Signal
56	VDD		+5V
57	PDO	I	+ Input of VCO Control Amplifier
58	PDO-	I	- Input of VCO Control Amplifier
59	VCOC	I	VCO Control Amplifier Output
60	VCOO	O	VCO Output
61	LF1	I	Input of Low Pass Filter
62	CLK	I	Clock
63	LASER	I	Laser Control Signal
64	66/60	I	Select of DSP LC7866/LC7860
65	NC		Non Connection
66	DF2	I	Input for Defect Pulse width Control
67	DF1	I	input for Defect Pulse width Control
68	PH3	O	Defect Detect Timing
69	BH	I	Track Detect Timing
70	PH	I	Focus Detect Timing
71	GND		Ground
72	RF SUM	O	RF SUM Amplifier Output
73	RFS-	O	IV Converter Output
74	LDO	O	Laser Diode ON
75	LDS	I	Input of Auto Laser Power Control
76	LDC	I	Input of Auto Laser Power Control
77	VDD		+5V
78	FIN1	I	IV Convert Input (From Photo Diode A+C)
79	FIN2	I	IV Convert Input (From Photo Diode B+D)
80	VREF1	I	Reference Voltage 1

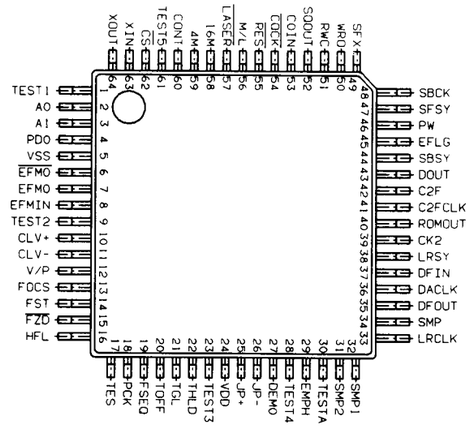
IC102 LA6524 (Dual Motor & Actuator Coil Driver)



IC BLOCK DAIGRAM

IC104 LC7866E (Digital Signal Processor)



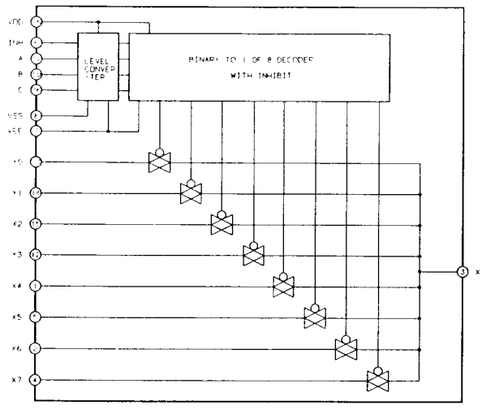


No	PIN NAME	I/O	DESCRIPTION
1	TEST1	I	For TEST. Normal time is non connection.
2	AO	O	Input from VCO output in LA9210 .(8.6436MHz) Phase comparison output of VCO and EFM signal.
3	AI	I	
4	PDO	O	
5	VSS		GND
6	$\overline{\text{EFMO}}$	O	Negative output through amplitude limiter. Antiphase of $\overline{\text{EFMO}}$. This signal use SLICE LEVEL CONTROL.
7	EFMO	O	Positive output through amplitude limiter. Antiphase of EFMO. This signal use SLICE LEVEL CONTROL.
8	EFMIN	I	Inputting HF signal of 1~2$V_{p\text{-}p}$. This signal use SLICE LEVEL CONTROL.
9	TEST2	I	For TEST. Normal time is non connection.
10	CLV+	O	Output for DISC MOTOR CONTROL.
11	CLV-	O	Output for DISC MOTOR CONTROL.
12	V/P	O	CLV rough Servo time : Output "H" Phase control time : Output"L"
13	FOCS	O	Output "H" : Lens pull up with slowly than stop the Focus Servo. If $\overline{\text{FZD}}$ generate, it reset output of FOCS. For lead-in of Focus
14	FST	O	
15	$\overline{\text{FZD}}$	I	
16	HFL	I	Comply with command of track jump, it oscillate kick Pulse, JP+ & JP-. It jump the prescribed number of track (1,4,16,64).
17	TES	I	Comply with command of track jump, it oscillate kick Pulse, JP+ & JP-. It jump the prescribed number of track (1,4,16,64).
18	PCK	O	PCK Monitor (4.3218MHz)
19	FSEQ	O	SYNC (FS of truth) detected from EFM signal = SYNC of counter : "H" (Latch Output during in 1 frame)
20	TOFF	O	Comply with command of track jump, it oscillate kick Pulse, JP+ & JP-. It jump the prescribed number of track (1,4,16,64).
21	TGL	O	
22	THLD	O	
23	TEST3	I	For TEST. Normal time is non connection.
24	VDD		+5V
25	JP+	O	Comply with command of track jump, it oscillate kick Pulse, JP+ & JP-. It jump the prescribed number of track (1,4,16,64).
26	JP-	O	
27	DEMO	I	For adjustment of production process. Sound on function.
28	TEST4	I	For TEST. Normal time is non connection.
29	EMPH	O	Output is "H" time, it need de-emphasis
30	TESTA	I	For TEST. Normal time is "H".

No	PIN NAME	I/O	DESCRIPTION
31	SMP2	O	Output of signal to DAC, Signal of Latch & L/R select, Signal for Sampling Hold
32	SMP1	O	
33	LRCLK	O	Output of signal to DAC, Signal of Latch & L/R select, Signal for Sampling Hold
34	SMP	O	
35	DFOUT	O	Output of signal to DAC, Signal of Latch & L/R select, Signal for Sampling Hold
36	DACLK	O	Output of signal to DAC, Signal of Latch & L/R select, Signal for Sampling Hold
37	TESTB	O	For TEST. Normal time is non connection.
38	TESTC	O	For TEST. Normal time is non connection.
39	CK2	O	For output of signal that Comply with CD-ROM
40	ROMOUT	O	For output of signal that Comply with CD-ROM
41	C2FLCK	O	For output of signal that Comply with CD-ROM
42	C2F	O	For output of signal that Comply with CD-ROM
43	DOUT	O	Output of DIGITAL OUT
44	SBSY	O	Synchronizing signal of sub-code block.
45	EFLG	O	For correction monitor of C1, C2, single, double.
46	PW	O	SFSY is Synchronizing signal of sub-code & frame. Clock of eighth send to SBCK then read out the sub-code of P, Q, R, S, T, U, V, & W.
47	SFSY	O	
48	SBCK	I	
49	FSX	O	Output of Synchronizing signal (7.35KHz)
50	WRQ	O	Data sub-code Q pass the CRC check then WRQ do "H". It detect at external, Data read out from SQOUT by send the $\overline{\text{CQCK}}$. RWC set the "H" by Micro Processor then it let command by send with Synchronizing $\overline{\text{CQCK}}$ command data.
51	RWC	I	
52	SQOUT	O	
53	COIN	I	
54	$\overline{\text{CQCK}}$	I	
55	RES	I	Turn on the Power Supply time : Once "L"
56	M/L	I	Data of SQOUT want at the LBS first time : M/L set the "L".
57	$\overline{\text{LASER}}$	O	This output can control at Serial Control from Micro Processor
58	16M	O	16M Output (16.9344MHz)
59	4M	O	4M Output (4.2336MHz)
60	CONT	O	This output can control at Serial Control from Micro Processor
61	TEST5	I	For TEST. Normal time is non connection.
62	CS	I	Chip select Terminal. This terminal "L" : LC7866 is active (Internal Resistor : Pull Down)
63	XIN	I	Connection Terminal of crystal oscillation (16.9344MHz)
64	XOUT	O	Connection Terminal of crystal oscillation (16.9344MHz)

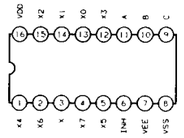
IC BLOCK DIAGRAM

IC601 BU4051B(Analog Multiplexer//De. Multiplexer)

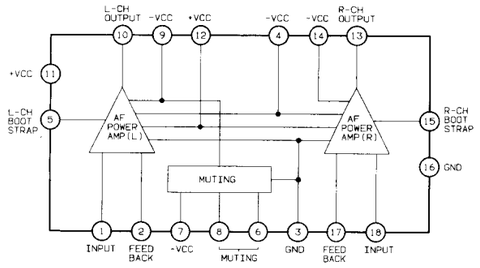


INHIBIT	A	B	C	ON SWITCH
L	L	L	L	X0
L	H	L	L	X1
L	L	H	L	X2
L	H	H	L	X3
L	L	L	H	X4
L	H	L	H	X5
L	L	H	H	X6
L	H	H	H	X7
H	X	X	X	NONE

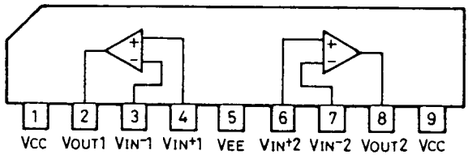
X : DON'T CARE



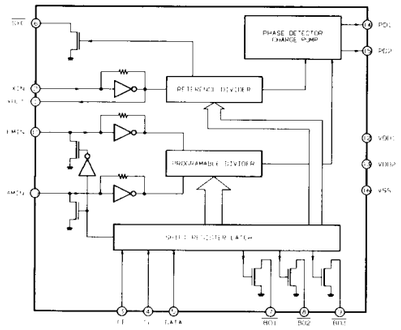
IC750 STK4112MK2 (2-CH AF Power Amp.)



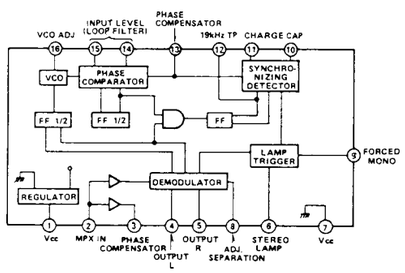
IC 901 LB1403N (LED level meter)



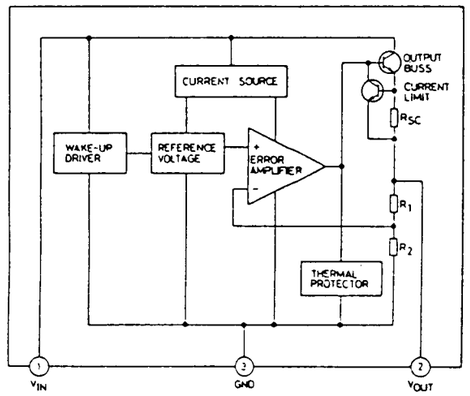
IC203 LM7000(Electrical Tuning PLL System)



IC202 LA3361(PLL FM MPLEX Stereo Demodulator)

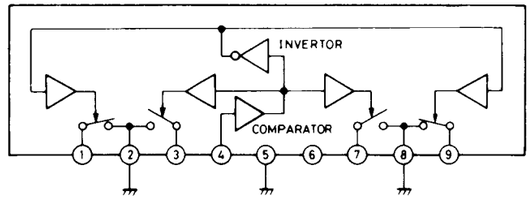


IC 950 AN7812F (3-terminal Voltage Regulator)

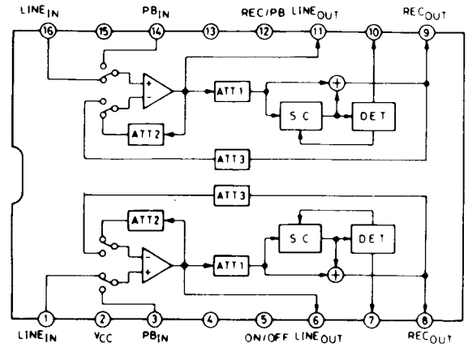


IC BLOCK DIAGRAM

IC502 μPC1330HA(2-ch Head Select SW for Tape Deck)

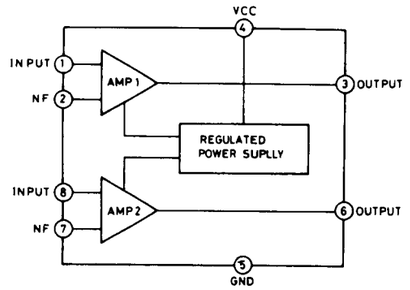


IC551 CXA1101P (Dolby-B Type Noise Reduction)

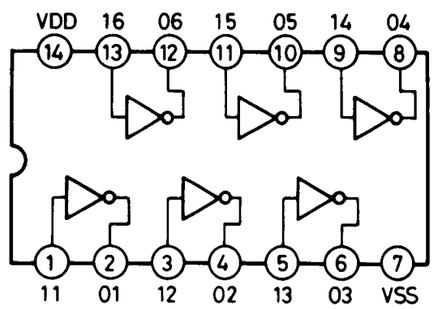


IC751 LA3161(2-ch Pre-Amplifier)

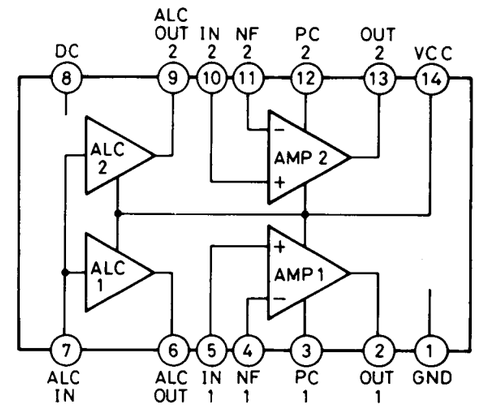
BLOCK DIAGRAM



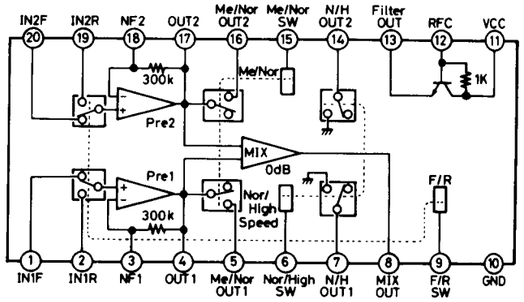
IC001 TC4069UB(Hex Inverter)



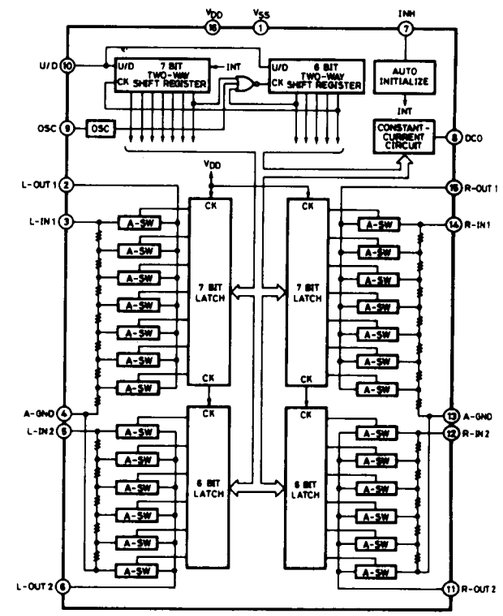
IC521 LA3220(Dual Pre-Amplifier with internal ALC)



IC 501 LA3246 (Pre. & Mixing Amp. with electrical SW)



IC 502 TC9153AP (Electric volume)



IC BLOCK DIAGRAM

PRE-AMP SECTION

IC251 μPD75306GF-225-3B9 (Micro Processor)

PIN No.	SIGNAL NAME	PORT NAME	DESCRIPTION	I/O	CONNECT
1	SEG12	S12	Segment of Liquid Crystal Display		LCD
2	SEG13	S13	Segment of Liquid Crystal Display		LCD
3	SEG14	S14	Segment of Liquid Crystal Display		LCD
4	SEG15	S15	Segment of Liquid Crystal Display		LCD
5	SEG16	S16	Segment of Liquid Crystal Display		LCD
6	SEG17	S17	Segment of Liquid Crystal Display		LCD
7	SEG18	S18	Segment of Liquid Crystal Display		LCD
8	SEG19	S19	Segment of Liquid Crystal Display		LCD
9	SEG20	S20	Segment of Liquid Crystal Display		LCD
10	SEG21	S21	Segment of Liquid Crystal Display		LCD
11	SEG22	S22	Segment of Liquid Crystal Display		LCD
12	SEG23	S23	Segment of Liquid Crystal Display		LCD
13	SEG24	S24 / BP0	Segment of Liquid Crystal Display		LCD
14	SEG25	S25 / BP1	Segment of Liquid Crystal Display		LCD
15	SEG26	S26 / BP2	Segment of Liquid Crystal Display		LCD
16	SEG27	S27 / BP3	Segment of Liquid Crystal Display		LCD
17	AUTO	S28 / BP4	Auto Tuning Signal ACTIVE : HIGH LEVEL	O	TUNER
18	NC	S29 / BP5	Not Used (Open)	O	OPEN
19	NC	S30 / BP6	Not Used (Open)	O	OPEN
20	NC	S31 / BP7	Not Used (Open)	O	OPEN
21	COM 0	COM0	Common of Liquid Crystal Display		LCD
22	COM 1	COM1	Common of Liquid Crystal Display		LCD
23	COM 2	COM2	Common of Liquid Crystal Display		LCD
24	COM 3	COM3	Common of Liquid Crystal Display		LCD
25	BIAS	BIAS	Bias of Liquid Crystal Display		
26	VLC0	V_{LC0}	Power Suppiy for Drive of Liquid Crystal Display		
27	VLC1	V_{LC1}	Power Supply for Drive of Liquid Crystal Display		
28	VLC2	V_{LC2}	Power Supply for Drive of Liquid Crystal Display		
29	STEP	P40	AM Step Selection 9kHz (V_{DD}) / 10kHz (V_{SS})	I	TUNER
30	ST	P41	ST Signal ACTIVE : LOW LEVEL	I	TUNER
31	SD	P42	SD Signal ACTIVE : LOW LEVEL	I	TUNER
32	NC	P43	Not Used (Ground)	I	V_{SS}
33	VSS	V_{SS}	Ground		
34	S CE	P50	Data Signal from LM7001 (For S Series)	O	TUNER
35	S CL	P51	Data Signal from LM7001 (For S Series)	O	TUNER
36	S DO	P52	Data Signal from LM7001 (For S Series)	O	TUNER
37	S MONO	P53	Compulsion Monaural (For S Series) ACTIVE : HIGH LEVEL	O	TUNER
38	NC	P00 / $\overline{INT4}$	Not Used (Ground)	I	V_{SS}
39	SCK	P01 / SCK	Clock Signal In from Main Micro Processor (μPD65117)	I	MAIN μCON
40	NC	P02 / SO / SB0	Not Used (Ground)		V_{SS}

IC BLOCK DIAGRAM

IC251 μPD75306 (Micro Processor)

PIN No.	SIGNAL NAME	PORT NAME	DESCRIPTION	I/O	CONNECT
41	SI	P03 / SI / SB1	Data In from Main Micro Processor (μPD75112)	I	MAIN μCON
42	NC	P10 / INT0	Not Used (Ground)	I	V_{SS}
43	NC	P11 / INT1	Not Used (Ground)	I	V_{SS}
44	NC	P12 / INT2	Not Used (Ground)	I	V_{SS}
45	NC	P13 / T10	Not Used (Ground)	I	V_{SS}
46	WIDE	P20 / PT100	Select Signal for AM Signal Type Wide (HIGH) / Narrow (LOW)	O	TUNER
47	S PCON	P21	Tuner Power Signal (For S Series) ACTIVE : HIGH LEVEL	O	TUNER
48	MUTE	P22 / PCL	Tuner Mute Signal ACTIVE : HIGH LEVEL	O	TUNER
49	BUSY	P23 / BUZ	Busy Signal Out to Main Micro Processor (μPD65117)	O	MAIN μCON
50	S0	P30 / LCDCL	Initial Set for User = Country (Open or Ground)	I	
51	S1	P31 / SYNC	Initial Set for User = Country (Open or Ground)	I	
52	S2	P32	Initial Set for User = Country (Open or Ground)	I	
53	S3 (FM MUTE)	P33	Select Signal for FM Auto Mute SET (Open) / NOT (V_{SS})	I	
54	VDD	V_{DD}	Power Supply +5V		V_{DD}
55	NC	XT1	Not Used (Ground) OSC X'tal Terminal for Main Clock	I	V_{SS}
56	NC	XT2	Not Used (Open) OSC X'tal Terminal for Main Clock	O	
57	NC	NC	Non Connection		
58	X1	–	X'tal In (4.194304 MHz)	I	
59	X2	–	X'tal Out (4.194304 MHz)	O	
60	S4 (12H / 24H)	P60 / KR0	Select Signal for CLOCK 24H (Open) / 12H (V_{SS})	I	
61	S5 (AM IF)	P61 / KR1	Select Signal for AM IF SET (Open) / NOT (V_{SS})	I	TUNER
62	S6 (D / S)	P62 / KR2	Select Signal for D & S Series SET (Open) / NOT (V_{SS})	I	
63	D MONO	P63 / KR3	Compulsion Monaural (For D Series) ACTIVE : HIGH LEVEL	O	TUNER
64	D DO	P70 / KR4	Data Signal from LM7001 (For D Series)	O	TUNER
65	D CL	P71 / KR5	Data Signal from LM7001 (For D Series)	O	TUNER
66	D CE	P72 / KR6	Data Signal from LM7001 (For D Series)	O	TUNER
67	D PCON	P73 / KR7	Tuner Power Signal (For D Series) ACTIVE : HIGH LEVEL	O	TUNER
68	$\overline{RESET}$	RESET	System Reset Signal		RESET CIRCUIT
69	SEG0	S0	Segment of Liquid Crystal Display		LCD
70	SEG1	S1	Segment of Liquid Crystal Display		LCD
71	SEG2	S2	Segment of Liquid Crystal Display		LCD
72	SEG3	S3	Segment of Liquid Crystal Display		LCD
73	SEG4	S4	Segment of Liquid Crystal Display		LCD
74	SEG5	S5	Segment of Liquid Crystal Display		LCD
75	SEG6	S6	Segment of Liquid Crystal Display		LCD
76	SEG7	S7	Segment of Liquid Crystal Display		LCD
77	SEG8	S8	Segment of Liquid Crystal Display		LCD
78	SEG9	S9	Segment of Liquid Crystal Display		LCD
79	SEG10	S10	Segment of Liquid Crystal Display		LCD
80	SEG11	S11	Segment of Liquid Crystal Display		LCD

VOLTAGES OF IC (CD)

(Unit : Volt)

IC101 LA9210M

Measuring Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Stop Mode	0	-5.0	0	0	0	0	0	0	0	2.4	2.6	2.6	0	0	0	0
Play Mode	0	-5.0	0	0	0	0	0	0	0	2.4	2.6	2.6	0	0	0	0
Measuring Pin No.	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Stop Mode	0	0	0	0	0	0	0	0	0	0	0.7	2.4	0	0	0	-5.0
Play Mode	0	0	0	0	0	0	0	0	0	0	0.4	2.4	-1.0	0	0.6	-5.0
Measuring Pin No.	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Stop Mode	0	0	0	5.0	5.0	0	0	0	0	0	0	0	5.0	5.0	4.1	4.1
Play Mode	Fluc	0	0	5.0	0	0	0	4.2	0	0	0	0	5.0	0	1.3	0
Measuring Pin No.	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
Stop Mode	4.1	0	0	0	2.5	2.5	2.5	5.0	2.5	2.5	2.5	4.1	2.7	2.4	5.0	0
Play Mode	4.1	0	0	1.4	2.5	2.5	2.5	5.0	2.5	2.5	2.5	4.1	2.7	2.4	0	0
Measuring Pin No.	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
Stop Mode	0	0.4	-0.3	0	-0.35	-0.35	0	-0.35	0	4.9	-5.0	4.9	5.0	0	0	0
Play Mode	0	0	0	0	0	0	0	0	0	0	0	0	5.0	0	0	0

Fluc : Fluctuation

IC102 LC6524

Measuring Pin No.	1	2	3	4	5	6	7	8	9	10
Stop Mode	0	0	-10.0	0	0	0	0	10.0	0	0

IC103 UPD75112

Measuring Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Stop Mode	4.7	4.8	0	0	0	0	4.8	2.3	2.3	4.8	4.8	4.8	0.3	4.8	0	0
Play Mode	0	4.8	0	0	0	0	4.8	2.3	2.3	4.8	4.8	0	4.8	4.8	0	0
Measuring Pin No.	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Stop Mode	0	0	4.6	0	0	0	0	4.8	0	0	4.8	4.8	0	5.0	4.8	4.8
Play Mode	0	0	4.6	0	0	0	0	4.8	0	0	4.8	4.8	0.3	5.0	4.8	4.8
Measuring Pin No.	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Stop Mode	4.8	4.8	5.0	5.0	0	0	0	0	0	0	0	0	5.0	5.0	5.0	5.0
Play Mode	4.8	4.8	5.0	5.0	0	0	flik	0	0	0	4.8	4.2	5.0	5.0	5.0	5.0
Measuring Pin No.	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
Stop Mode	5.0	0	0	5.0	5.0	0	5.0	5.0	5.0	4.8	4.8	4.8	0	0	4.8	4.8
Play Mode	5.0	0	0	5.0	5.0	0	5.0	5.0	5.0	4.8	4.8	4.8	4.8	0	4.8	4.8

IC104 LC7866E

Measuring Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Stop Mode	0	2.31	2.34	2.51	0	2.46	2.48	2.52	0	0	0	4.92	0	2.51	4.07	4.07
Play Mode	Fluc	Fluc	Fluc	Fluc	0	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc
Measuring Pin No.	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Stop Mode	4.07	2.5	0	4.95	4.97	0	0	5.0	0	0	0	0	0	5.0	1.25	1.25
Play Mode	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	5.0	Fluc	Fluc	Fluc	Fluc	Fluc	5.0	Fluc	Fluc
Measuring Pin No.	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Stop Mode	2.5	2.5	0	2.5	0	2.5	2.41	1.63	2.5	4.5	2.52	Fluc	2.28	0	2.5	0
Play Mode	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	0(4.5)	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc
Measuring Pin No.	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
Stop Mode	2.5	Fluc	Fluc	Fluc	0	5.0	4.48	0	4.92	Fluc	2.33	4.93	0	0	2.28	2.47
Play Mode	Fluc	Fluc	Fluc	Fluc	0	5.0	Fluc	0	Fluc	Fluc	Fluc	Fluc	Fluc	0	Fluc	Fluc

IC105 LC7883KM

Measuring Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Stop Mode	2.0	4.0	5.0	5.0	2.5	0	2.5	0	0	4.8	4.8	5.0	0	0	0	0
Play Mode	2.0	4.0	5.0	5.0	2.5	2.5	2.5	0	0	4.8	4.8	5.0	0	0	0	0
Measuring Pin No.	17	18	19	20	21	22	23	24	25	26	27	28				
Stop Mode	0	0	0	0	0	0	1.4	1.3	1.9	0	0	2.0				
Play Mode	0	0	0	0	0	0	1.4	1.3	1.9	0	0	2.0				

VOLTAGES OF IC & TRANSISTOR (CD)

IC106 XRA15218F

Measuring Pin No.	1	2	3	4	5	6	7	8
Stop Mode	2.0	2.0	2.0	-5.0	2.0	2.0	2.0	5.0
Play Mode	2.0	2.0	2.0	-5.0	2.0	2.0	2.0	5.0

IC107 M5278SD05

Measuring Pin No.	1	2	3
Stop Mode	10.8	5.0	0
Play Mode	10.5	5.0	0

IC108 NJM97L05

Measuring Pin No.	1	2	3
Stop Mode	-11.0	-5.0	0
Play Mode	-10.8	-5.0	0

IC121 LA6510

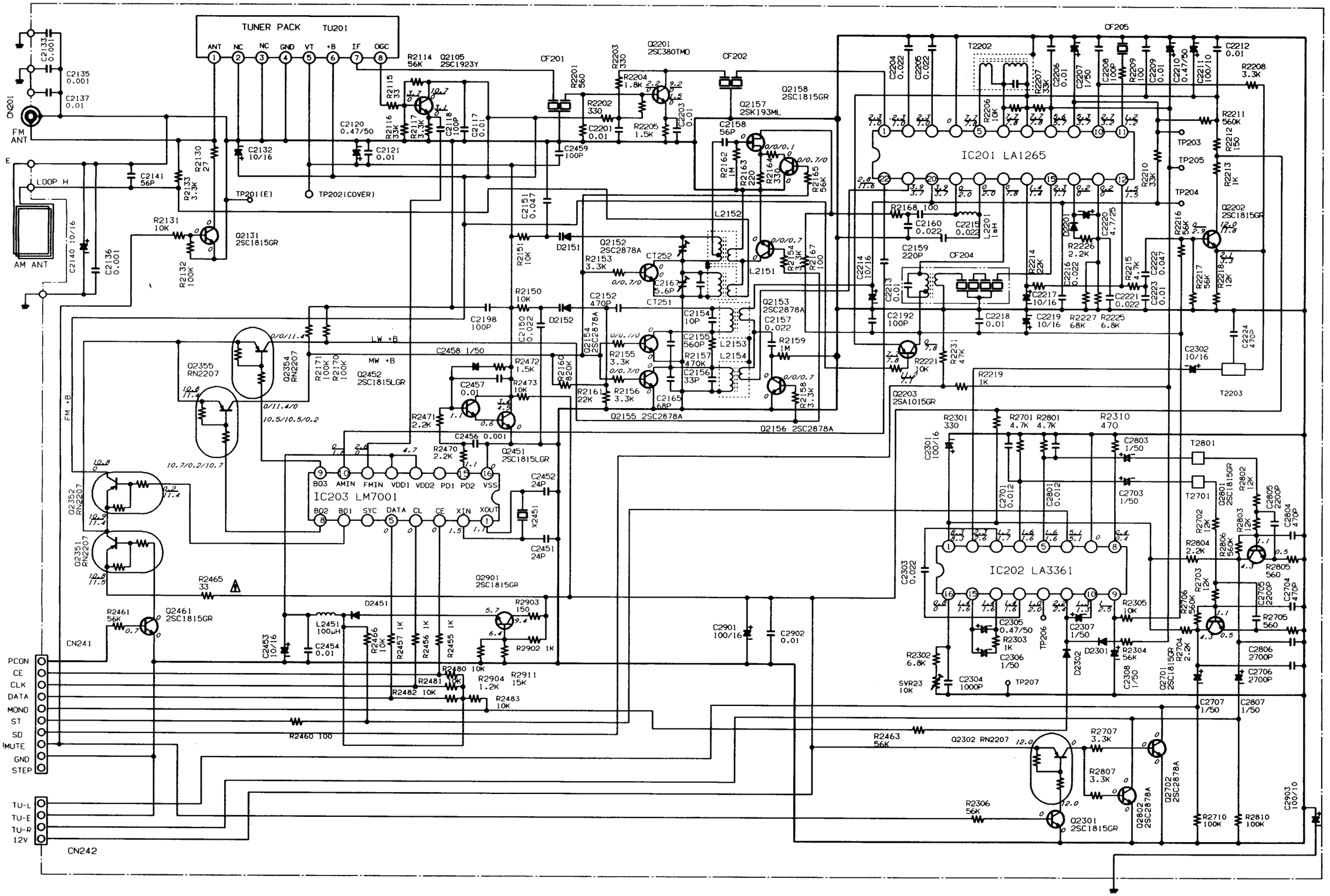
Measuring Pin No.	1	2	3	4	5	6	7	8	9	10
Stop Mode	0	0	0.3	0.3	-11.0	0	0	-0.4	0	10.8
Play Mode	0	0	0.3	0.3	-10.8	0	0	-0.4	0	10.5

TRANSISTOR

(Unit : Volt)

Transistor No.	Q1101			Q1103			Q1111			Q1112		
Measuring Pin Name	E	C	B	E	C	B	E	C	B	E	C	B
Stop Mode	5.0	0	4.9	2.5	2.7	2.5	4.7	4.7	4.0	0	0	4.8
Play Mode	3.6	2.0	0	2.5	2.7	2.5	0	-5.0	0	0	0	4.8
Transistor No.	Q1113			Q1311			Q1312			Q1313		
Measuring Pin Name	E	C	B	E	C	B	E	C	B	E	C	B
Stop Mode	0	0	4.8	4.8	4.8	4.2	0	0	0.6	0	4.8	0
Play Mode	0	5.0	4.8	4.8	4.8	4.2	0	0	0.6	0	4.8	0
Transistor No.	Q1321			Q1322			Q1501			Q1502		
Measuring Pin Name	E	C	B	E	C	B	E	C	B	E	C	B
Stop Mode	0	0	10.5	0	4.8	0	4.0	5.0	4.7	0	0	0.7
Play Mode	0	0	10.5	0	4.8	0	4.0	5.0	4.7	0	0	-5.0
Transistor No.	Q1503											
Measuring Pin Name	E	C	B									
Stop Mode	0	0	0.7									
Play Mode	0	0	-5.0									

SCHEMATIC DAIGRAM (TUNER)



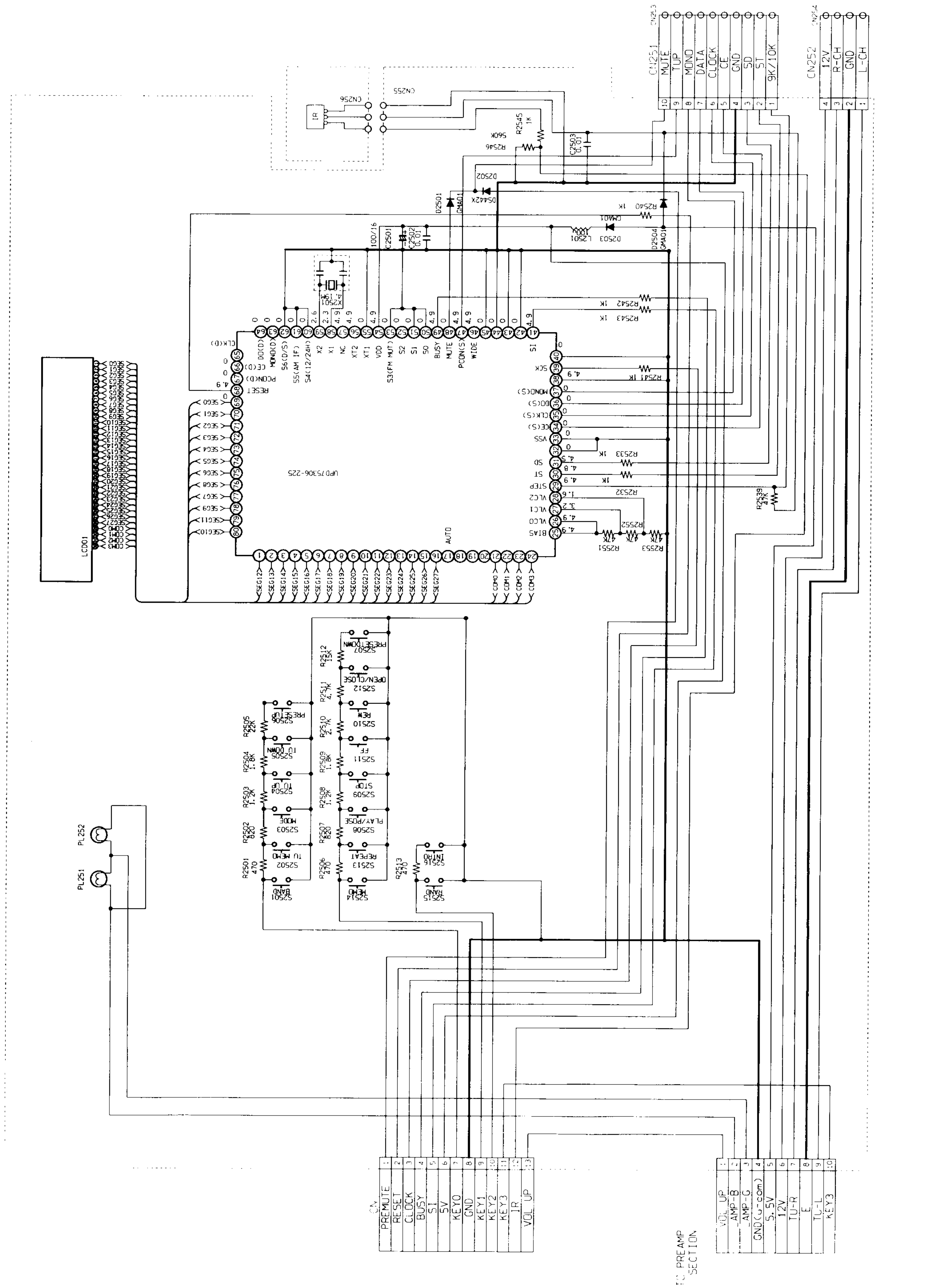
IC BLOCK DIAGRAM

CD MAIN AMP SECTION

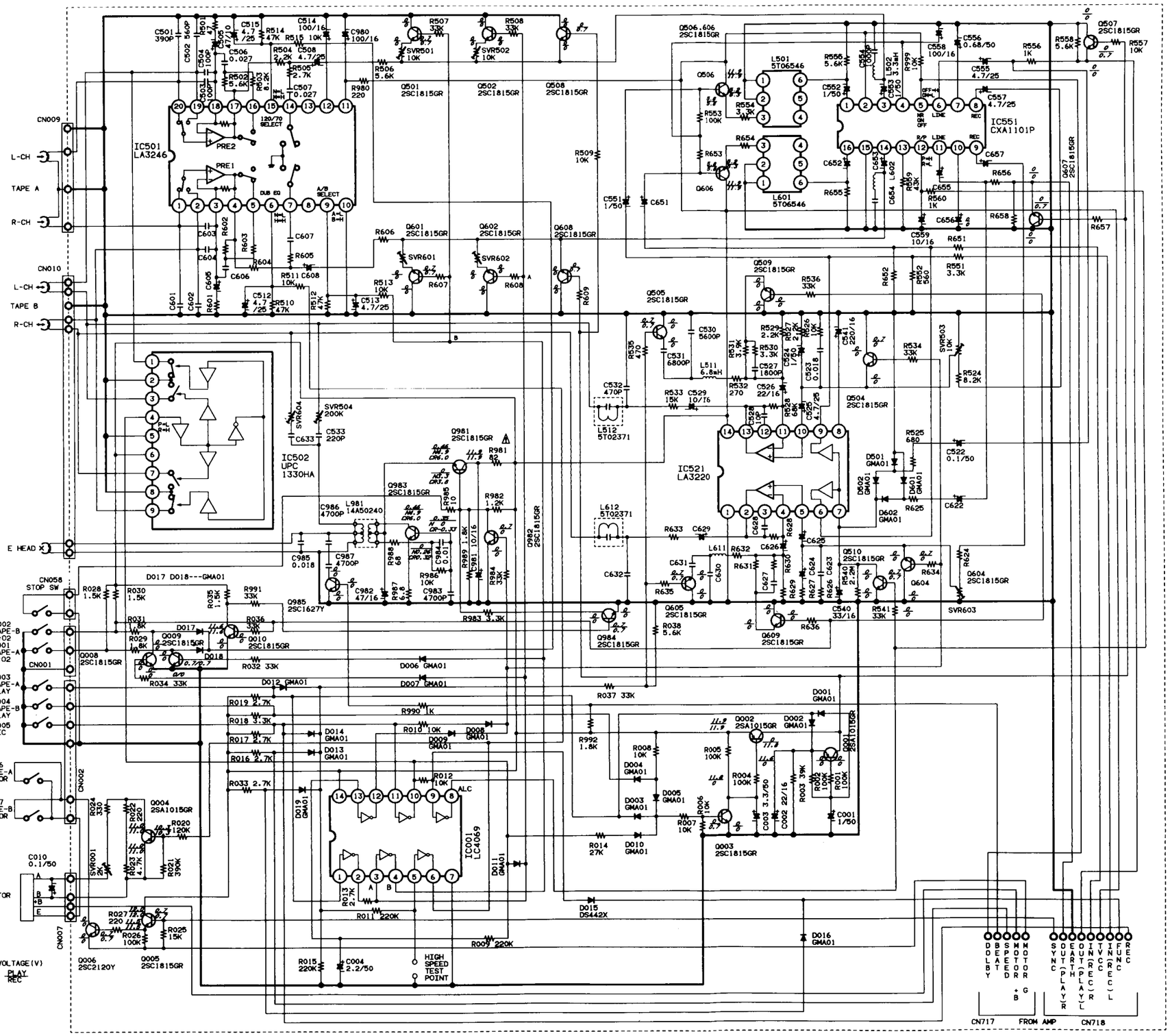
IC103 μPD75112GF-752-3BE (Micro Processor)

PIN No.	SIGNAL NAME	PORT NAME	DESCRIPTION	I/O
1	CD MUTE	P41	CD Mute Output	O
2	P CON	P40	"H" Level at Power ON	O
3	NC	P53	Not Used (Open)	O
4	FUNC C	P52	Function Control C Signal	O
5	FUNC B	P51	Function Control B Signal	O
6	FUNC A	P50	Function Control A Signal	O
7	$\overline{RESET}$	RESET	System Reset	I
8	X2		X'tal Oscillator Connect at 4.19 MHz	
9	X1		X'tal Oscillator Connect at 4.19 MHz	
10		P63	Not used.	O
11		P62	Not used.	O
12		P61	Not used.	O
13		P60	Not used.	O
14		P73	Not used.	O
15	SYNCRO	P72	Syncro Output	O
16	VOL UP	P71	Volume Up	O
17	VOL DOWN	P70	Volume Down	O
18	A MUTE	P83	Analogue Audio Mute Output "L" Active	O
19		P82	Not used.	O
20		P81	Not used.	O
21		P80	Not used.	O
22	PRE MUTE	P93	Tuner Pre Mute Output "Active"	O
23		P92	Not used.	O
24	SUB SO	P91	Data Out to Tuner Micro Processor (μPD75306)	O
25	SUB CLK	P90	Clock Out to Tuner Micro Processor (μPD75306)	O
26	VSS	—	Ground	
27	SUB BUSY	P13	Busy Signal In from Sub Micro Processor (μPD75306)	I
28	V CHK	P12	El;ectricity Failure Detector	I
29	WRQ	P11	WRQ Input from LC7860N	I
30	IR	P10	Infrared Ray Receiving (Remocon) Signal	I
31	KEY3	PTH03	Key Input Analogue Signal	I
32	KEY2	PTH02	Key Input Signal	I
33	KEY1	PTH01	Key Input Analogue Signal	I
34	KEY0	PTH00	Key Input Analogue Signal	I
35	THLD	TI0	THLD Input	I
36	NC	TI1	Not Used .Pull up to +5V.	I
37	SLED OUT	P23	SLED Outer Direction Output "H" Active	O
38	NC	P22	Not Used (Open)	O
39		P21	Not used.	O
40	RWC	P20	RWC Output to LC7860N	O
41	SQOUT	P03/SI	SQOUT Input from LC7860N	I
42	COIN	P02 /SO	COIN Output to LC7860N	O
43	CQCK	P01 / SCK	CQCK Output to LC7860N	O
44	DRF	PO0 / INT4	DRF Signal Input from LA9200N	I
45	SW3	P123	Mechanism Switch 2 Input	I
46	SW2	P122	Mechanism Switch 2 Input	I
47	SW1	P121	Mechanism Switch 1(Limit SW) Input	I
48	SENSOR	P120	Mechanism Sensor Input	I
49	POWER	P133	Power ON ("H") Input	I
50	REC SW	P132	Tape Rec. Switch (Rec. Key On "H")	I
51	DIREC	P131	Tape Play Direction (Edge Detection)	I
52	NC	P130	Pull up to 5V.	I
53		P143	Pull up to 5V.	I
54	HI SEL	P142	Select Signal for High Speed Access	I
55		P141	Pull up to +5V.	I
56		P140	Pull up to +5V.	I
57	NC	NC	Pull up to 5V.	
58	VDD	VDD	Power Supply +5V	
59	NC	P33	Not Used (Open)	O
60	NC	P32	Not Used (Open)	O
61	DSP RESET	P31	Reset Control Signal for DSP (Digital Signal Processor)	O
62	ATT	P30	DAC (Digital to Analogue Converter) Interface [Data]	O
63	SHIFT	P43	DAC (Digital to Analogue Converter) Interface [Clock]	O
64	LATCH	P42	DAC (Digital to Analogue Converter) Interface [Latch]	O

SCHEMATIC DAIGRAM (DISPLAY)



SCHEMATIC DAIGRAM (DECK)



PLAY···TAPE B PLAY
REC ···TAPE B REC

IC501	VOLTAGE (V)		
	PLAY	REC	OTHER
1	0	0	
2	0	0	
3	0.59	0.59	
4	4.4	4.4	
5	4.4	4.4	
6	0	0	5.9(HI.DUB.)
7	0	0	
8	4.4	4.4	
9	5.9	5.9	0(TAPE A PLAY)
10	0	0	
11	9.7	9.7	
12	9.7	9.7	
13	4.4	4.4	
14	0	0	
15	0	0	5.9(Cr02)
16	4.4	4.4	
17	4.4	4.4	
18	0.59	0.59	
19	0	0	
20	0	0	

S001 TAPE A SELECT SW "Cr02"
S002 TAPE B SELECT SW "Cr02"
S003 TAPE A PLAY SW "OFF"
S004 TAPE B PLAY SW "OFF"
S005 TAPE B REC SW "OFF"
S006 TAPE A MOTOR SW "OFF"
S007 TAPE B MOTOR SW "OFF"

IC502	VOLTAGE(V)	
	PLAY	REC
1	0	0
2	0	0
3	0	0
4	0	11.6
5	0	0
6	11.9	11.9
7	0	0
8	0	0
9	0	0

IC521	VOLTAGE (V)		
	PLAY	REC	OTHER
1	0	0	
2	0.59	0.59	
3	11.2	11.2	
4	5.9	5.9	
5	5.9	5.9	
6	0	0	
7	0	0	1.15(ALC DOING)
8	5.9	5.9	
9	0	0	
10	5.9	5.9	
11	5.9	5.9	
12	11.2	11.2	
13	5.9	5.9	
14	11.9	11.9	

IC551	VOLTAGE (V)		
	PLAY	REC	OTHER
1	6.0	6.0	
2	11.9	11.9	
3	6.0	6.0	
4	6.0	6.0	
5	11.9	11.9	0(DOLBY ON)
6	6.1	6.1	
7	0.4	0.4	
8	6.1	6.1	
9	6.1	6.1	
10	0.4	0.4	
11	6.1	6.1	
12	11.8	0	0(FUNCTION SW (NON TAPE \REC
13	1.2	1.2	
14	6.0	6.0	
15	0	0	
16	6.0	6.0	

IC001	VOLTAGE (V)			
	PLAY	REC	HI.DUB	NOR.DUB
1	11.3	11.2	0	0
2	0	0.35	12.0	12.0
3	0	10.4	11.0	11.0
4	11.8	0	0	0
5	10.7	10.5	0.4	9.6
6	0	0	11.9	0
7	0	0	0	0
8	12.0	0	12.0	12.0
9	0	11.1	0.6	0.6
10	0	11.1	11.6	11.6
11	11.5	0	0	0
12	11.9	0	0	0
13	0	10.8	11.4	11.4
14	12.0	12.0	12.0	12.0

COMMON USE

D001 002 003 004 005 006
007 008 009 010 011 012
013 014 016 017 018 019
501 601 502 602

GMA01
(or1SS133)

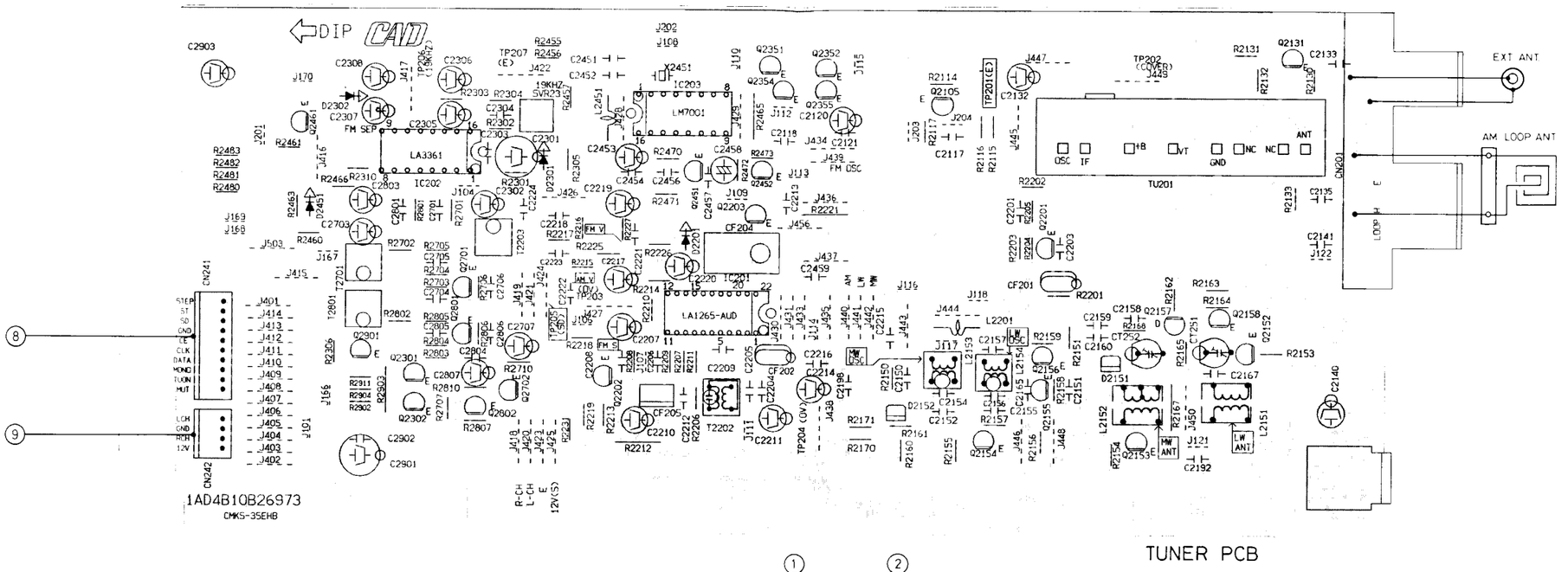
D015
DS442X
(or1S2473)

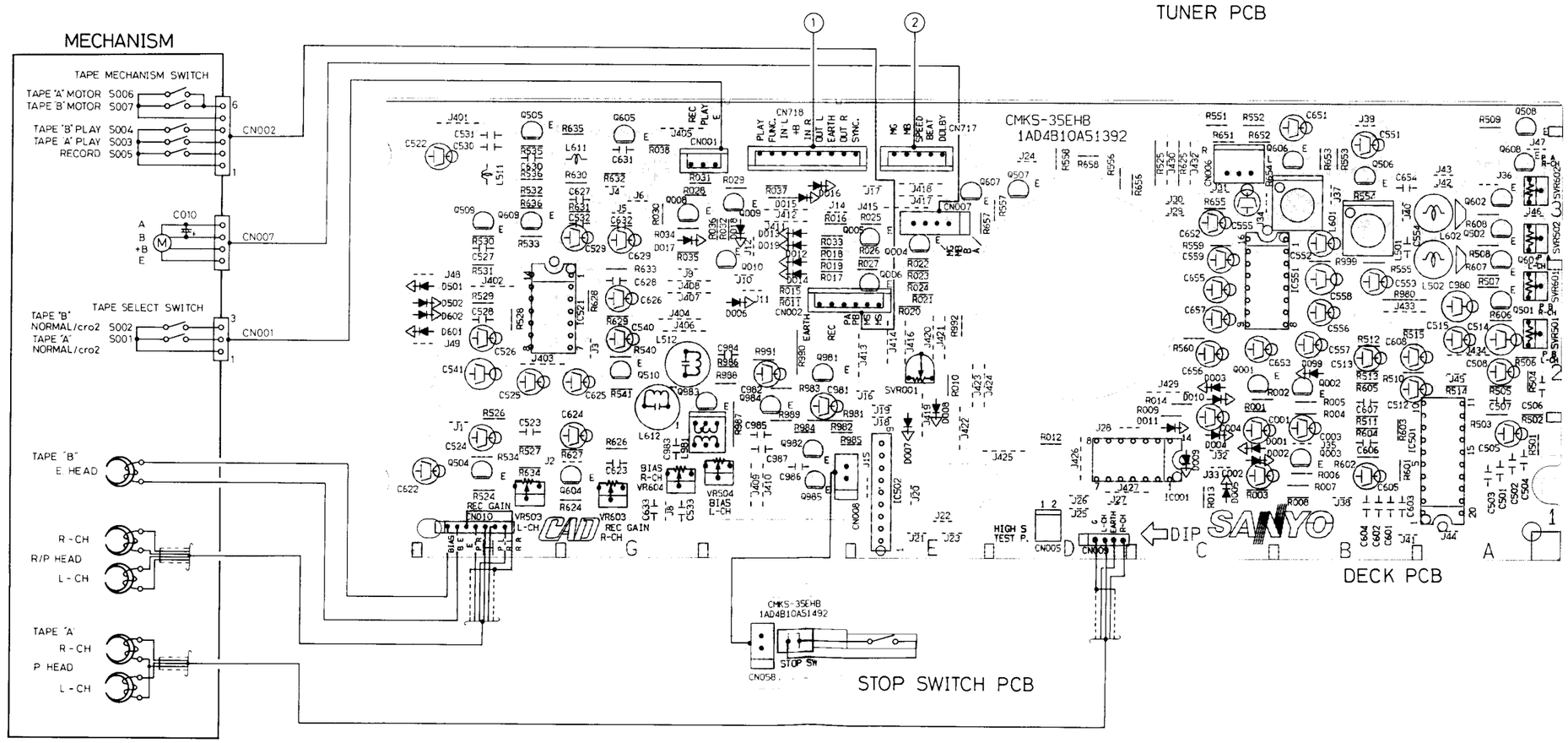
Q501 601 502 602 504 604
505 605 506 606 507 607
508 608 509 609 510 982
984 003 005 008 009 010
2SC1815GR
(or2SC945K or2SC1740S)

Q981 983
2SC1815GR
(or2SC945K)

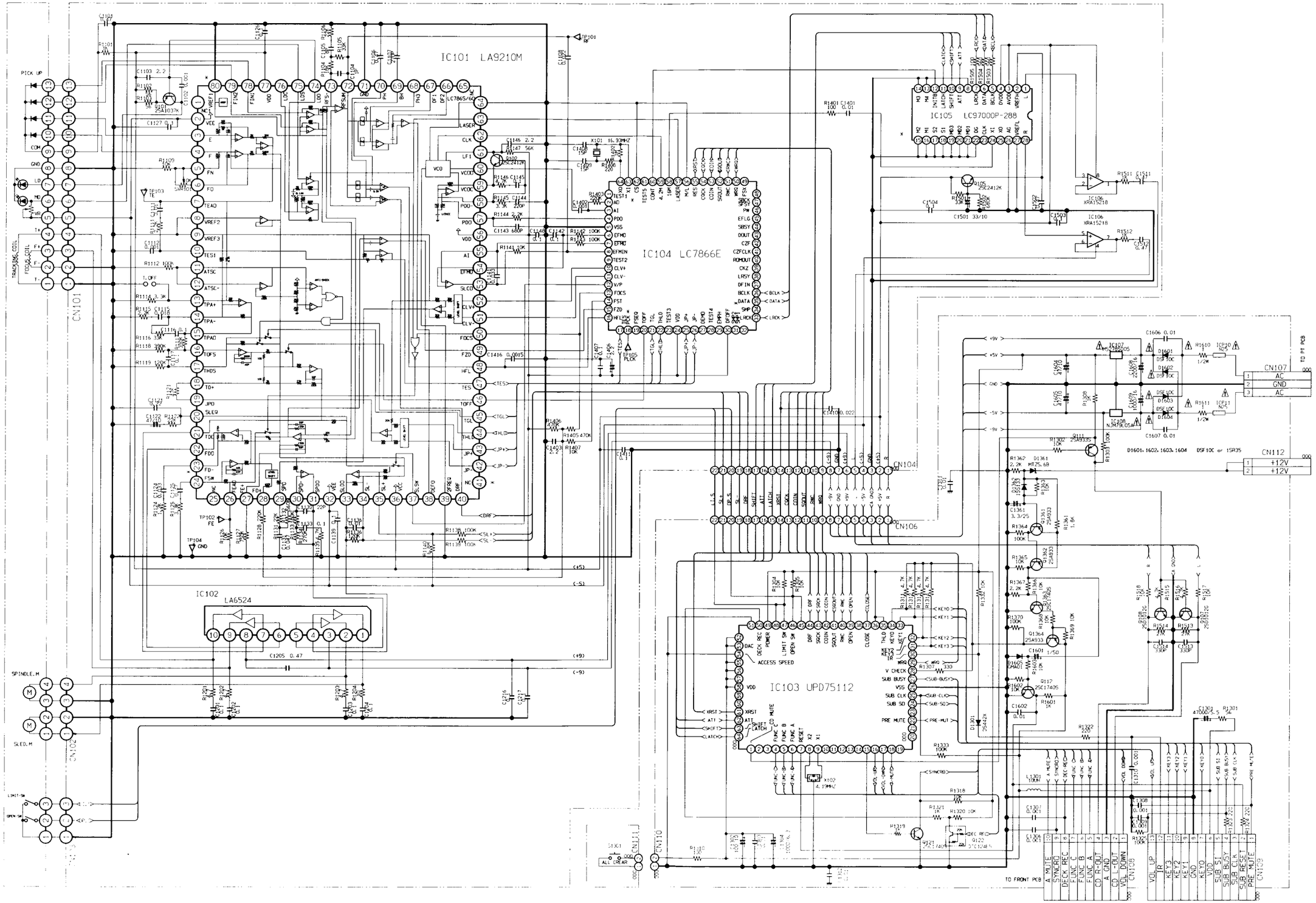
Q001 002 004
2SA1015GR
(or2SA733P)

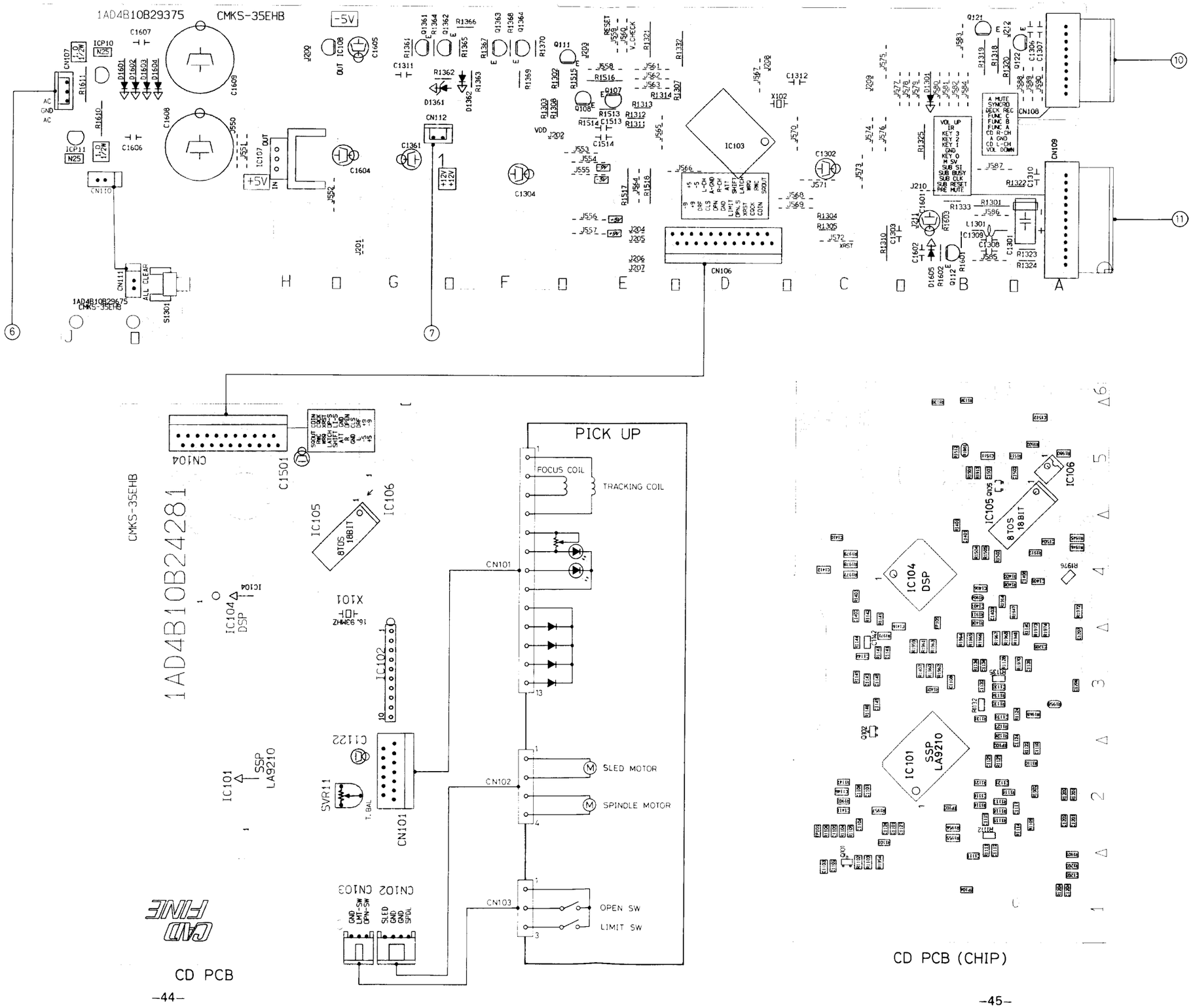
Q006
2SC2120Y
(or2SC2001K)


DIP
1AD4B10B26973
CMKS-35EHB
LA3361
LM7001
LA1265-AUD
TU201
EXT ANT
AM LOOP ANT
CN241
CN242
CN201
TUNER PCB


MECHANISM
TAPE MECHANISM SWITCH
TAPE 'A' MOTOR S006
TAPE 'B' MOTOR S007
TAPE 'B' PLAY S004
TAPE 'A' PLAY S003
RECORD S005
CN002
C010
CN007
TAPE SELECT SWITCH
TAPE 'B' NORMAL/cro2 S002
TAPE 'A' NORMAL/cro2 S001
CN001
TAPE 'B' E HEAD
R-CH
R/P HEAD
L-CH
TAPE 'A' R-CH
P HEAD
L-CH
CMKS-35EHB
1AD4B10A51392
CMKS-35EHB
1AD4B10A51492
STOP SW
CN058
STOP SWITCH PCB
DECK PCB
SANYO

SCHEMATIC DAIGRAM (CD)

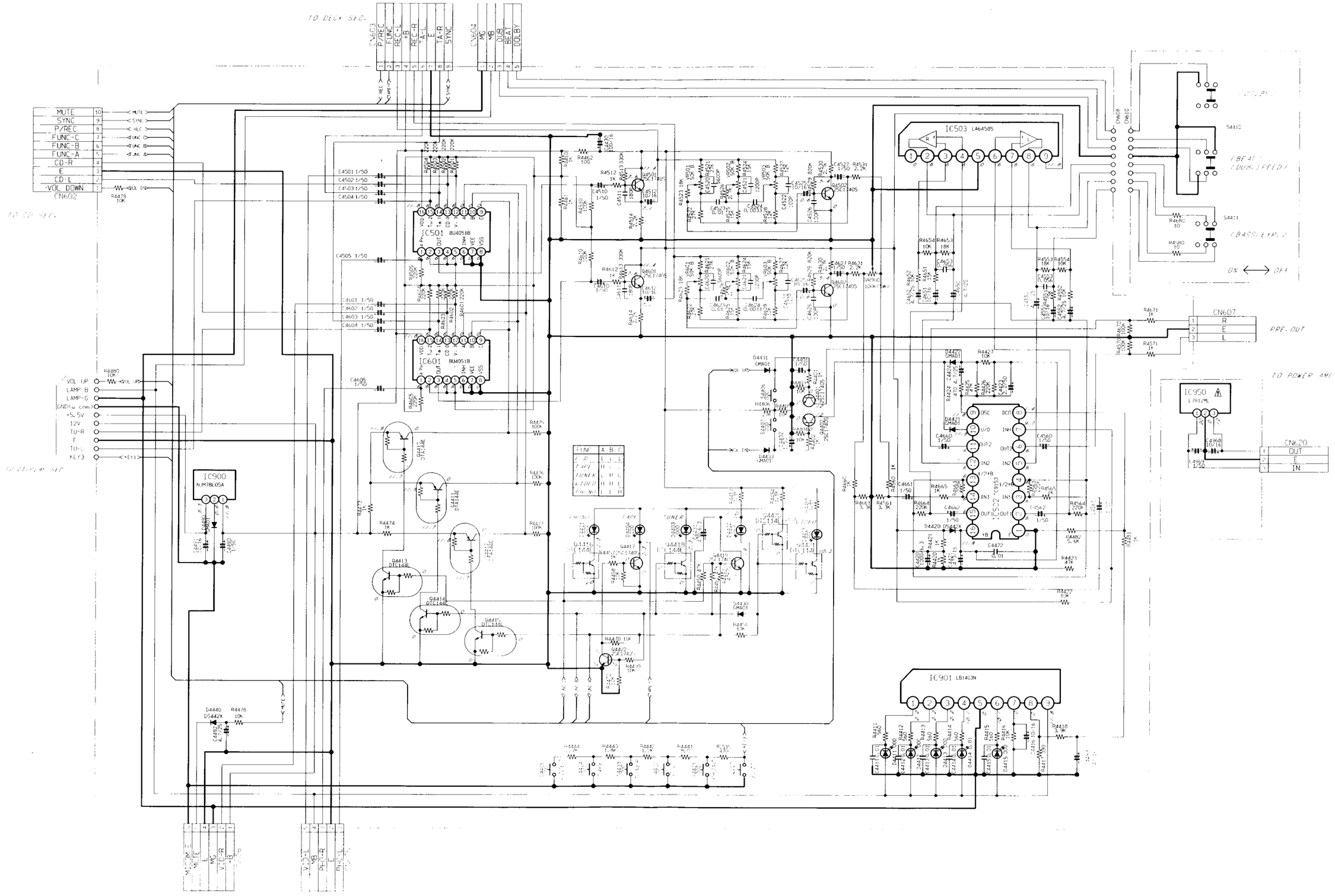


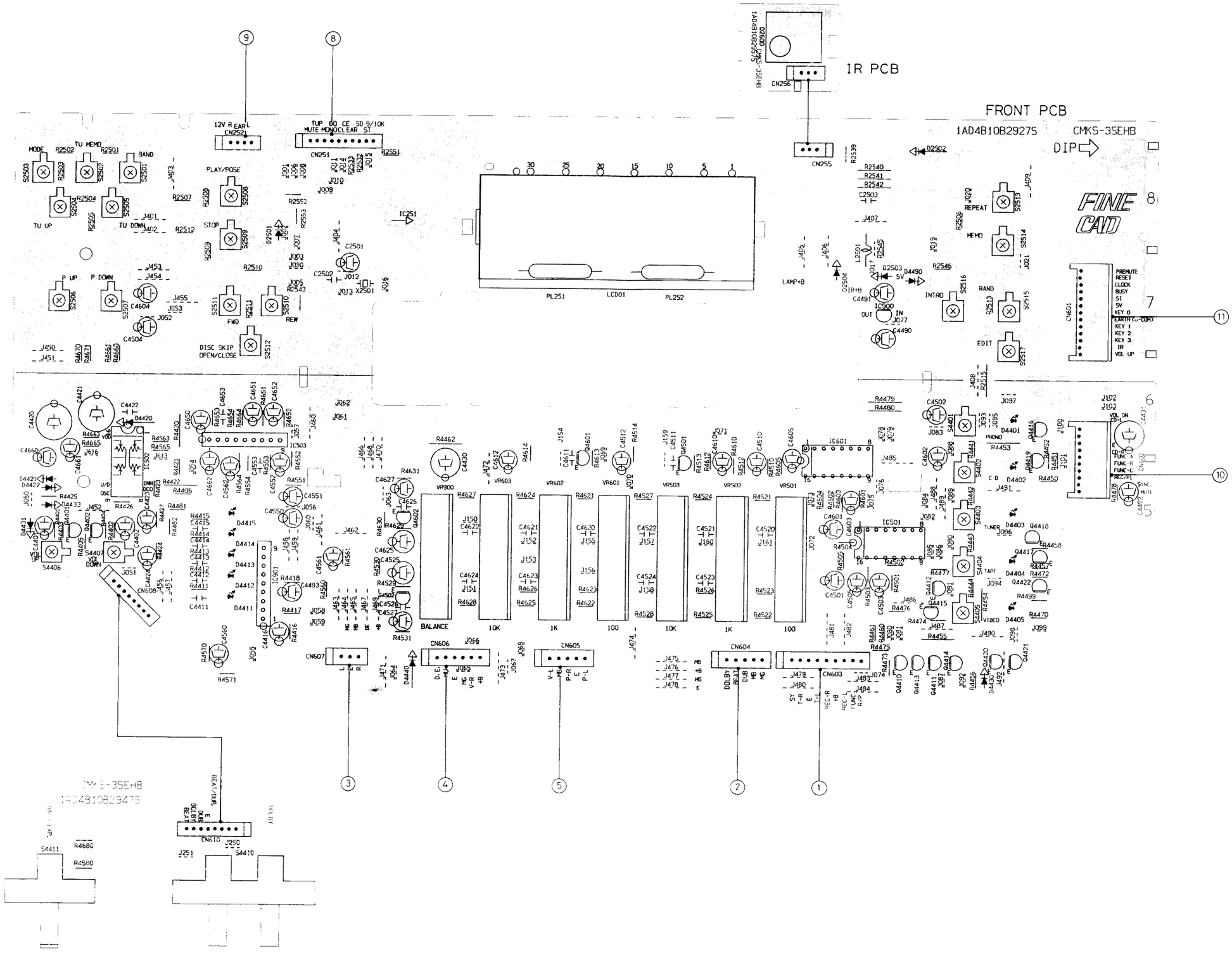


CD PCB

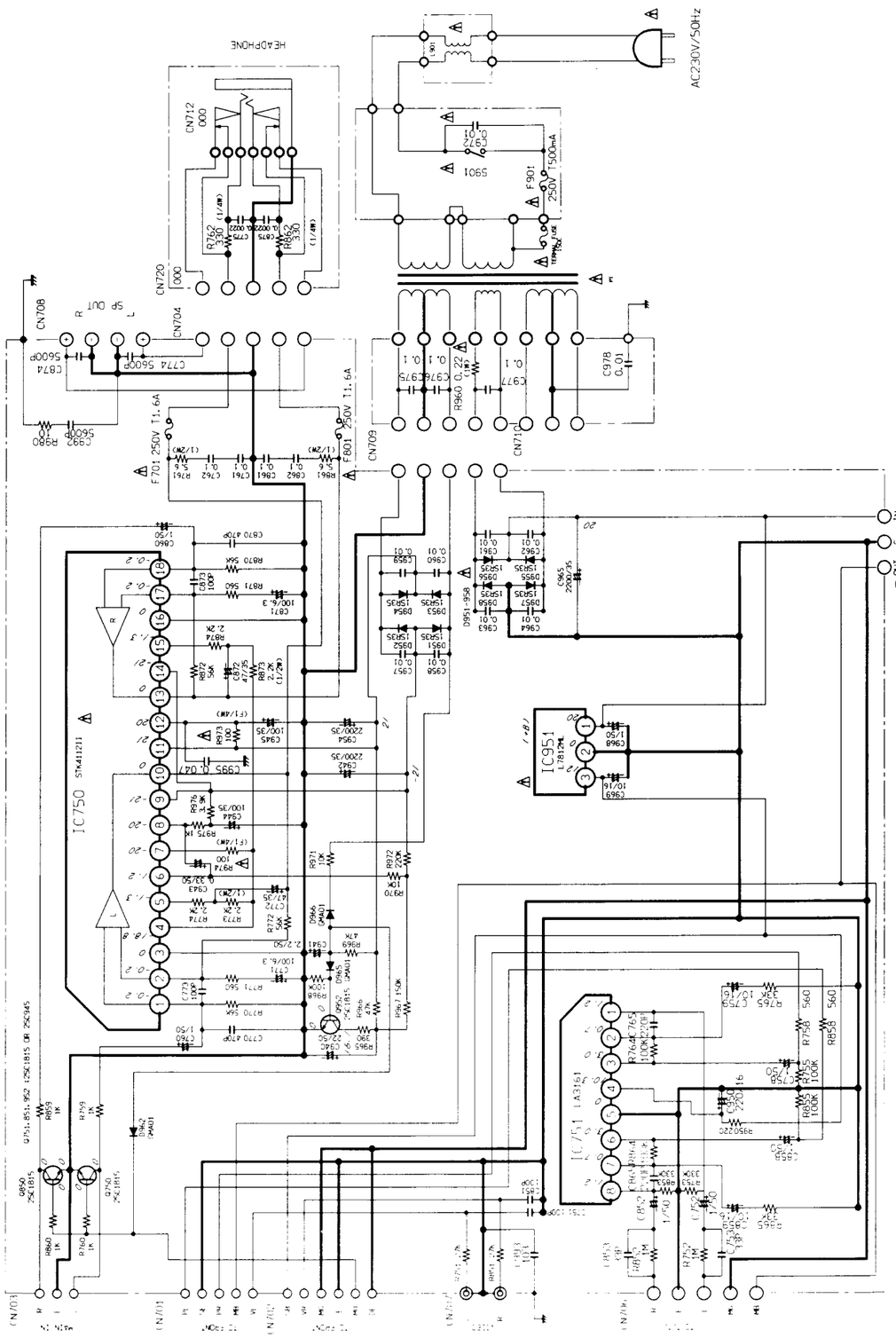
CD PCB (CHIP)

SCHEMATIC DAIGRAM (PRE AMP.)

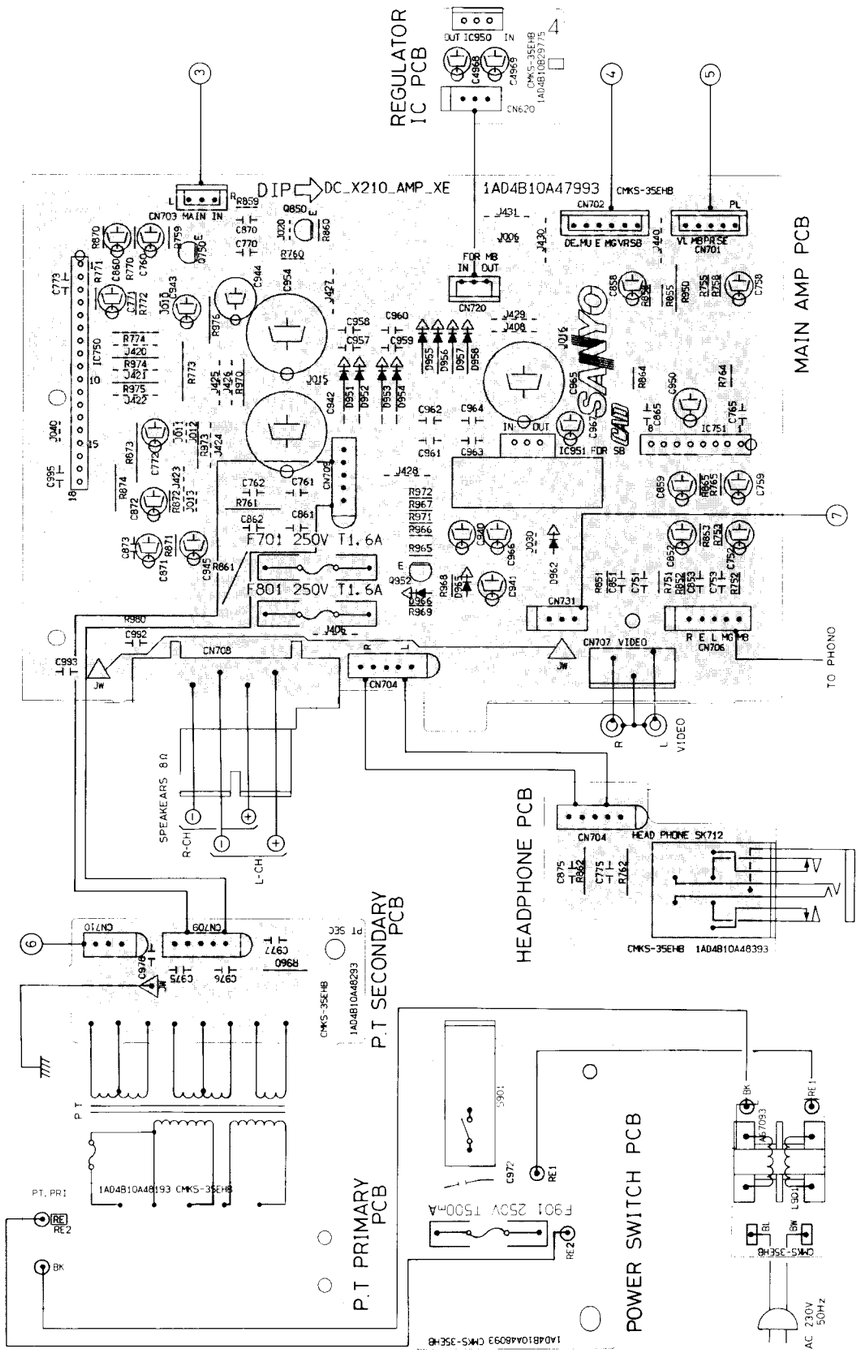



IR PCB
D2500 CMKS-35EHB
1AD4B10B29575
CN256
CN255
FRONT PCB
1AD4B10B29275
CMKS-35EHB
DIP
FINE CAD
12V REAR
CN252
TUP DO CE SD 9/10K MUTE MONO CLEAR ST
CN251
MODE
TU MEMO
BAND
TU UP
TU DOWN
PLAY/POSE
STOP
P UP
P DOWN
FWD
REW
DISC SKIP OPEN/CLOSE
IC251
PL251
LCD01
PL252
REPEAT
MEMO
RAND
EDIT
INTRO
PREMUTE
RESET
CLOCK
BUSY
5V
KEY 0
KEY 1
KEY 2
KEY 3
IR
VOL UP
VOL DN
PHONO
TUNER
TAPE
VIDEO
FUNC-A
FUNC-B
FUNC-C
REC SYNC
SYNC MUTE
BALANCE
10K
1K
100
CN606
CN607
CN605
CN604
CN603
CN610
IC601
IC501
IC503
IC502
CMKS-35EHB
1AD4B10B29475
DOLBY BEAT
DUB
MG
E
P-L
P-R
V-L
V-R
+B
REC-L
REC-R
FUNC
R/P
SY
T-R
T-L
D.E
M-G
M-B
VOL/DUB
S4411
S4410
R4680
R4580
J251
J250

SCHEMATIC DIAGRAM (POWER AMP.)



WIRING DIAGRAM(POWER AMP)



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