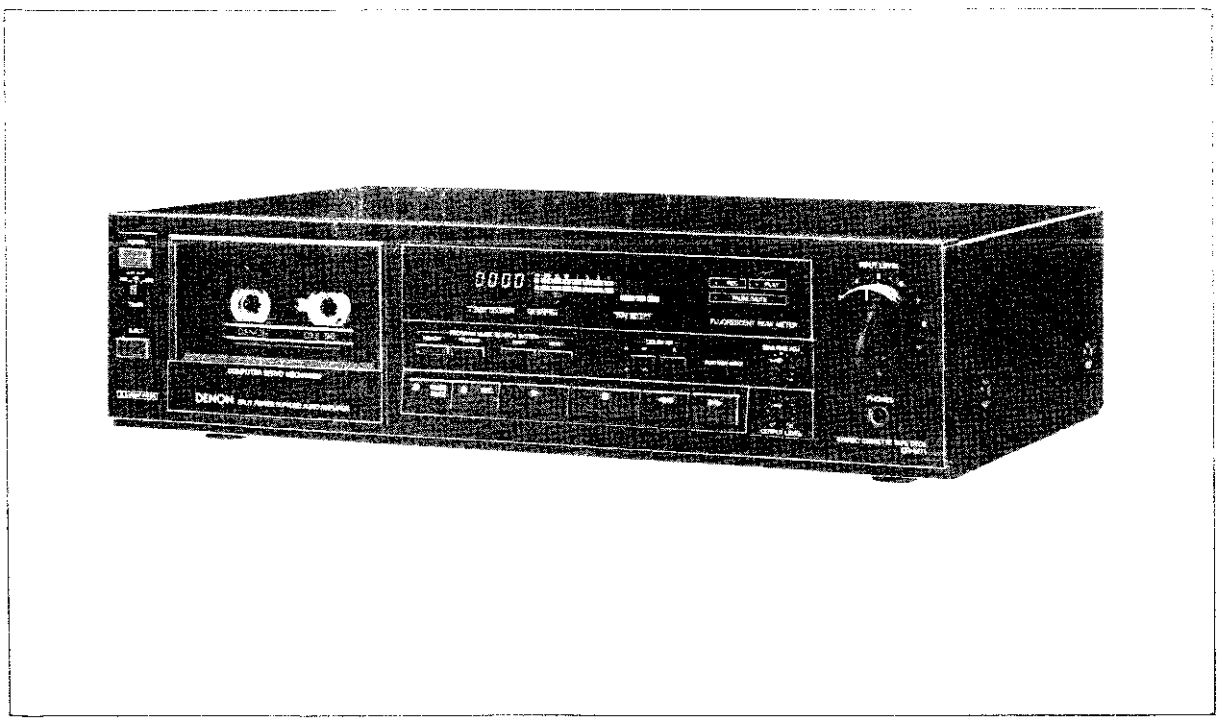
DENON

Hi-Fi Component

SERVICE MANUAL

STEREO CASSETTE TAPE DECK

MODEL DR-M11



NIPPON COLUMBIA CO., LTD.

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FEATURES

- [illegible] technology
  - Silent, soft-touch controls provide maximum ease-of-use.
  - [illegible] full-logic tape controls enable fool-proof operation.
- Program music search system.
- Computing tape counter with 4-digit readout and memory stop.
- Dolby-C noise reduction systems.
- Extended range, dual-color fluorescent peak meters.
- Auto tape selector.
- Bias fine adjustment.

SPECIFICATIONS

• Type	Vertical tape loading 4-track 2-channel stereo cassette tape deck
• Heads	SF Record/Playback head x 1 Erase head (Ferrite) x 1
• Motors	Electronic servo DC motor (for capstan) x 1 DC motor (for reel winding) x 1
• Tape Speed	4.8 cm/sec.
• Fast forward, rewind time	Approx. 90 sec. with a C-60 cassette
• Recording bias	Approx. 105 KHz
• Overall S/N ratio (at 3% THD level)	Dolby C NR on ... more than 70 dB (CCIR/ARM)
• Overall frequency response	30~18,000 Hz ±3dB (at –20 dB METAL tape)
• Channel separation	More than 40 dB (at 1 KHz)
• Crosstalk	More than 65 dB (at 1 KHz)
• Wow & flutter	0.045% wrms
• Inputs	
line	77.5 mV (–20 dB) input level at maximum Input impedance: 50 Kohm unbalanced
• Outputs	
line	775 mV (0 dB) output level at maximum (with 10 Kohm load, recorded level of 200 pwb/mm)
headphone	1.2 mW output level at maximum (optimum load impedance 8 ohm~2 Kohm)
• Accessories	Parallel pin cord x 2
• Power supply	50 Hz/60 Hz compatible, voltage is shown on rating label
• Power consumption	18W
• Dimensions	434 (W) x 115 (H) x 286 (D) mm
• Weight	5.6 kg

- **Above specifications and design styling are subject to change for improvement.**
- "Dolby" and the symbol ▯▯ are the registered trademark of Dolby Laboratories Licensing Corporation. The Dolby Noise reduction system is licensed by Dolby Laboratories Licensing Corporation.

WARNING:

1. Component parts

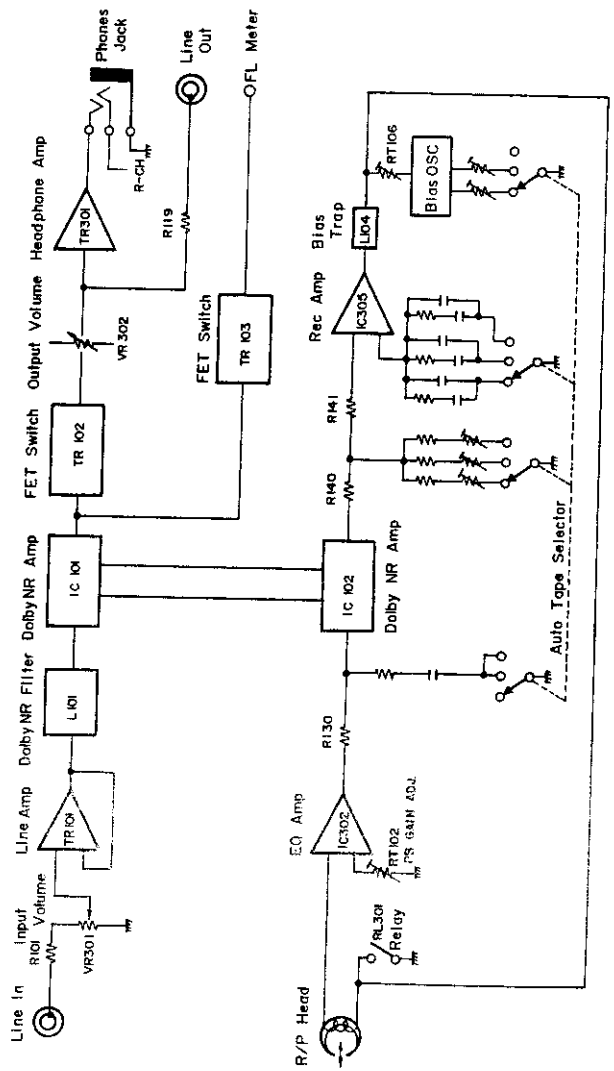
Parts marked with ⚠ and/or shading in this service manual have special characteristics imporatnt to safety. Besure to use the specified parts for replacement.

2. Leakage current

Before returning the appliance to customer, test the leakage current when the power plug is connected. Use a calibrated (with an error of not more than 5%) leakage current tester and measure the leakage current from any exposed metal to the earth ground. Reverse the power plug polarity and test the above again.

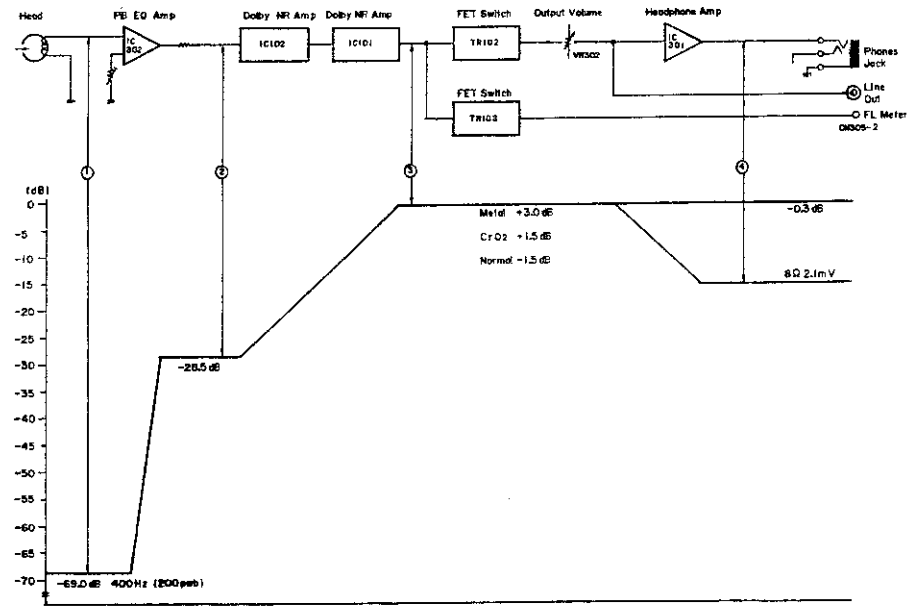
Any current measured MUST NOT EXCEED 0.5 milliamps. Corrective measure must be taken if it exceeds the limit.

BLOCK DIAGRAM

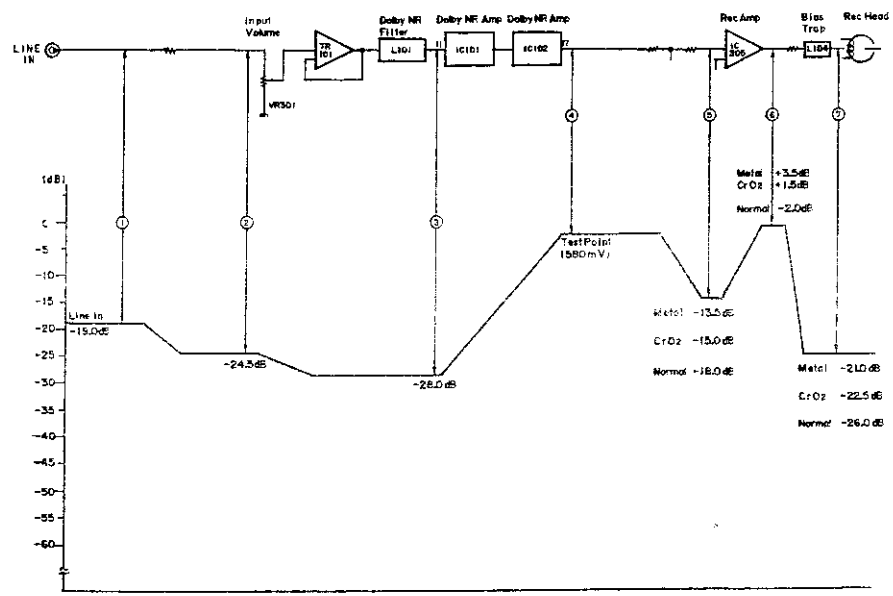


LEVEL DIAGRAM

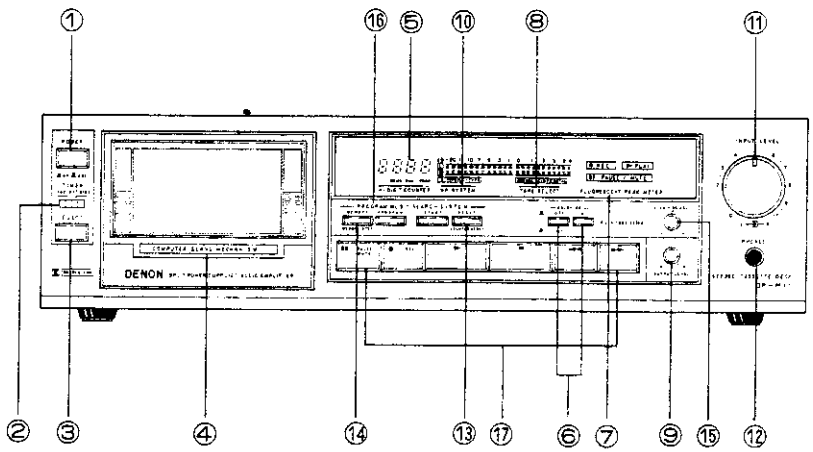
PLAYBACK SYSTEM



RECORDING SYSTEM



PART NAMES AND FUNCTIONS



1. POWER switch
Controls the supply of AC power to the deck. One push turns the deck on, a second push turns it off. The deck remains in a stand-by (non-operative) mode for approximately 4 seconds after it is switched on.

2. TIMER swtich
This switch is provided for use with an optional audio timer for unattended recording or morning-alarm playback. For non-timer operation, this switch should be set in the "off" position.

3. EJECT button
Press this button to eject the cassette. When the deck is operating (tape is running), press the stop (■) key first to stop the tape transport; the press the EJECT button.

4. Cassette compartment cover
If this compartment cover is not closed completely, the deck's transport controls will remain inoperative.

5. TAPE COUNTER
A four-digit readout indicates the present tape count position.

6. DOLBY NR switches
The left Dolby NR switch activates (in) or deactivates (out) the deck's Dolby noise reduction circuitry. The right switch selects between Dolby B-Type (out) or C-Type NR (in).

7. FLUORESCENT PEAK METERS
These meters indicate recording or playback peak levels for each channel.

8. TAPE SELECT indicator
This indicator light is interlocked with the Auto Tape Select feature which automatically adjusts the deck to the type of tape in use. (NORMAL, CrO_2, or METAL).

9. OUTPUT LEVEL control
This control adjusts playback, recording monitor, and headphones output levels for the both channels simultaneously.

10. NR SYSTEM indicator
This indicator light is interlocked with the Dolby NR switch and informs the user that Dolby NR is in use as well as which (B or C) Type.

11. INPUT LEVEL controls
These controls are used to adjust recording levels for each channel. The front control is for the left channel; the rear control for the right channel.

12. PHONES jack
For private music enjoyment without disturbing others, or for monitoring a recording, a set of headphones may be plugged in. Impedance is from 8 to 1200 ohms.

13. RESET button
Operation of the button resets the counter to all zero.

14. MEMORY STOP button
During rewinding operations, the tape will stop at the "0000" counter point automatically when this button is pressed in.

15. BIAS FINE ADJ control
(for NORMAL and CrO_2 tape)
Adjust the bias according to the tape characteristics. Standard biasing is obtained at the center click-stop position.

16. PROGRAM MUSIC SEARCH SYSTEM
It is possible to playback any selection chosen from a maximum of 15 selections recorded on either side of a cassette tape.

17. Tape transport controls

▶	▶ PLAY KEY	Press to playback tape.
■	■ STOP KEY	Press to stop tape in any mode.
◀◀	◀◀ REW KEY	Press for fast rewind.
▶▶	▶▶ FF KEY	Press for fast forward tape winding.
● REC	● RECORD KEY	To begin recording, press the RECORD and PLAY keys simultaneously. If only the RECORD key is pressed, the deck is placed in the REC PAUSE (record standby) mode.
❚❚ PAUSE MUTE	❚❚ PAUSE/MUTE KEY	The PAUSE key causes the tape to stop momentarily during recording or to mute the recording input to create blank (non-recorded) portions on the tape.

OUTLINE OF PROGRAM MUSIC SEARCH SYSTEM (PMSS)

1. PMSS control circuit of Logic Section

Fig. 1 Block diagram of PMSS control section adopted in the DENON DR-M11 series

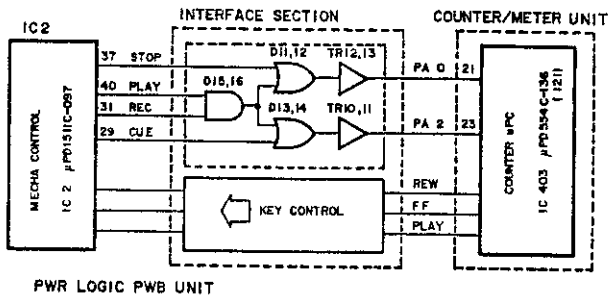


Fig. 1 Block diagram of PMSS

The control circuit consists of a MECHACON (Mechanism Control #μPD 1511C-097, a COUNTER-MICRON (Counter-Micro-Computer) #MPD 554C-136 (121), and an Interface Section.
The MECHACON (IC-2) will send control information suitable to themechanism's function to the counter micon, as outlined in the Function Table shown in Fig. 2. After receiving this information, the counter-micro-computer will send the appropriate command for the information back to the MECHACON.

Mode \ Logic output	PA_0	PA_2
PLAY	H	H
STOP	H	L
CUE	L	H
FF/REW ETC.	L	L

$PA_0 = \overline{REC} \cdot PLAY + STOP$
$PA_2 = \overline{REC} \cdot PLAY + CUE$

Fig. 2 Function Table

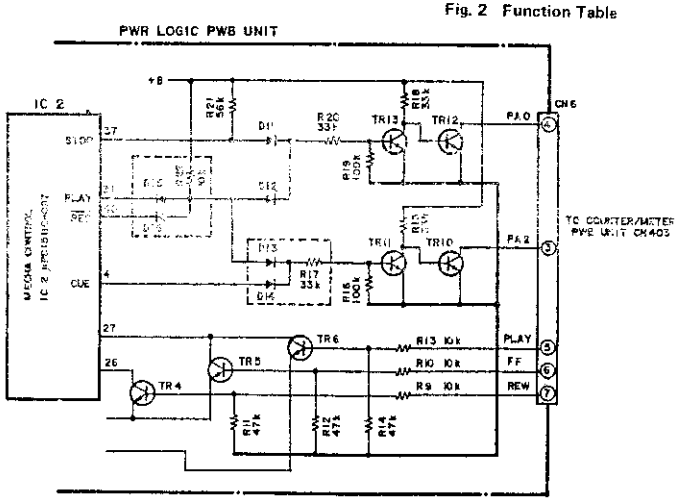


Fig. 3 Details of Interface Circuit

2. Audio section CUE control circuit

Fig. 4 Block diagram of music interval detection circuit (CUE detection)

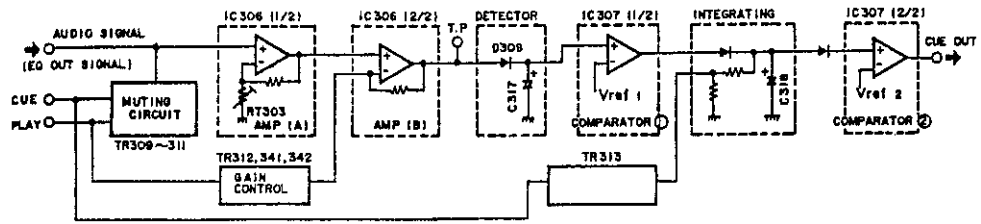


Fig. 4 CUE detection

The audio signal from the playback head is amplified by the equalizing amplifier and relayed to the music interval detection circuit. This signal enters the amplifier through the muting circuit.
The muting circuit consists of three transistors (Tr. 309-311), and shuts off only when the mode is in CUE/PLAY.
The gain control circuit consists of TR-312, R341, R342, and the PLAY signal. To compensate for the difference in detection levels caused by the speed difference when in the CUE/PLAY mode, this circuit adjusts the amplifier (B) gain.

The signal as amplified by IC 306 will be detected by D309, C317, and through a comparator 1 (1/2 IC 307), and then will be converted from an analog to a digital signal.
The integrated circuit controls the charge/discharge time constant through the output pulse of the comparator 1. It then determines the characteristic of the music interval detection. The time constant is switched to PLAY/CUE by TR313.
The output signal of comparator 2 is entered into the counter microcomputer as a "CUE OUT SIGNAL".

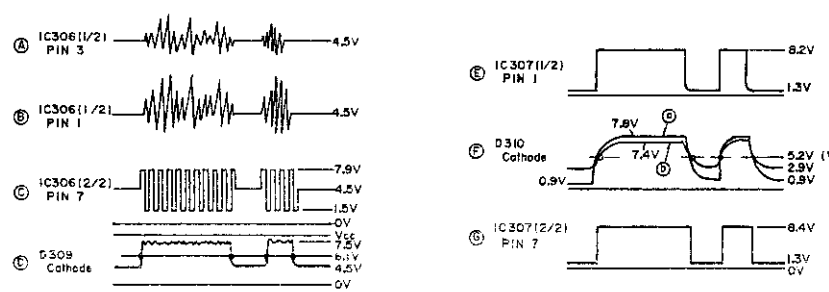
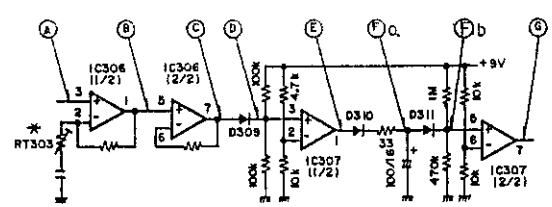


Fig. 5 Wave form



*1 Electrical adjusting point
*2 Signal checking point

Fig. 6 Checking point of wave form

• Outline of the Mechanism Control Microcomputer

The function of the microcomputer, which is applied to the uni-directional transport cam drive control cassette deck mechanism, will receive an outside signal from the operation switch (operations such as PLAY, REC, STOP, FF) during the recognition of the current condition or from the surrounding circuits of the microcomputer (counter, cam encoder, reel pulse, etc.) and sends the appropriate control signal.

To the mechanism: rotational direction of the reel motor, speed, stop, rotational direction of the cam motor, stop.

To the counter: makes an output of the mechanism run mode command (REW, FF, PAUSE, PLAY).

To the display: REC, PAUSE (REC MUTE during flash).

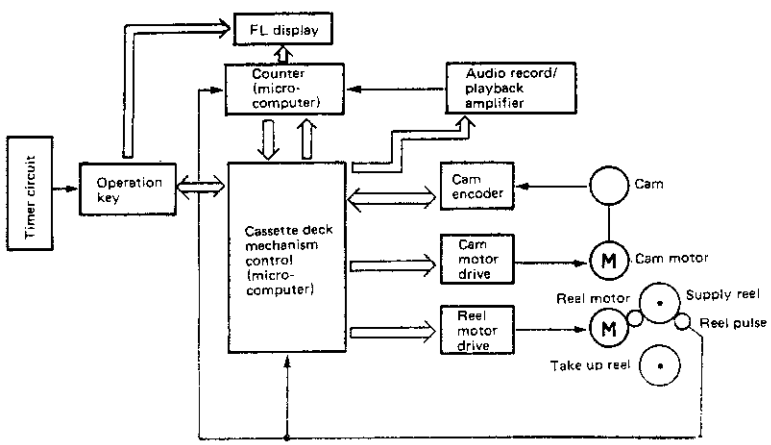
In addition, the following points are taken into consideration.

(1) Stable and accurate cam rotation position control is required since a cam drive method is employed to make the mechanism silent. Accurate rotation position control is performed by using a cam drive with a rotary encoder detected digital feedback servo.

(2) Since the leading time of the cam drive is slower when compared to that of the plunger method, problems will arise when attempting record/playback or stop at the designated tape position from FF or REW, since tape overrun occurs.

(3) Overload measures of the cam

If the cam stops due to an overload for any reason and cannot shift to the target position within 4 seconds, it is immediately shifted to STOP. If this cannot be shifted within 4 seconds, the microcomputer will stop all controls and stop the motor to prevent a breakdown.



DISASSEMBLY INSTRUCTIONS

1. How to Remove the Front Panel

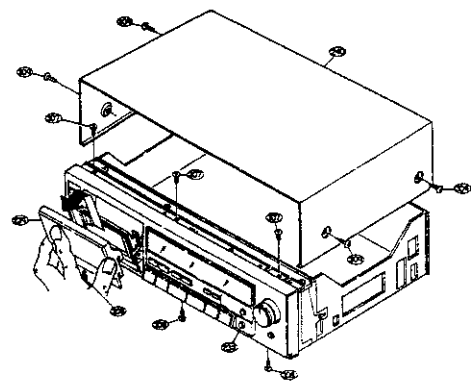
(1) Unscrew the 4 screws 309 from both sides of the top cover 240 and take off the top cover by pulling it up.

(2) Press the eject knob 231, open the cassette window 239 and take off the mechanism, as shown in the diagram.

Note: Be careful when handling the cassette window, as it is easily scratched.)

(3) Remove the connector (3P) with lead wires, which runs from the timer switch 234 to the rear of the logic circuit board 202, from the logic circuit board.

(4) The front panel can be removed by unscrewing the 3 upper screws (3x8 CFTS S tight) 307 from the front panel 233 and the 3 lower screws (3x8 CBTS P tight) 308.



2. How to Remove the Mechanisms

(1) Remove the top cover 240 and the front panel 233. (Refer to section 1)

(2) Unscrew the 2 mechanism holding screws (3x6 CBTS S tight) 304 from the bottom surface of the chassis 201.

(3) Unscrew the 2 screws (3x6 CBTS S tight) 304 holding the angle 210 and the mechanism 207 and the 3 screws holding screws 301, 310 and remove the angle.

(4) Remove the connectors with lead wires, which runs from the mechanism section, from the circuit board.

Audio circuit board side 3P connector CN302 CN303
6P connector CN301

Logic circuit board side 2P connector CN2 CN4
5P connector CN8 CN9
6P connector CN10

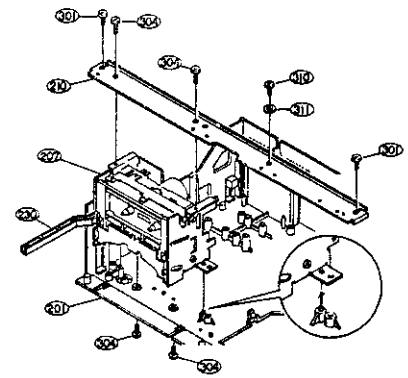
Note: When assembling, check to make sure the connectors are inserted correctly.

(5) Pull out the power switch lever 230 from the power switch 259.

(6) Remove the eject knob 231.

(7) The mechanism can be removed by holding the mechanism and pulling up.

Note: When assembling, do so after checking to make sure the 2 stay holes on the lower side of the mechanism unit are matched with the chassis protrusions.



3. Removal of Front Escutchion, Meter Window, and Control Button

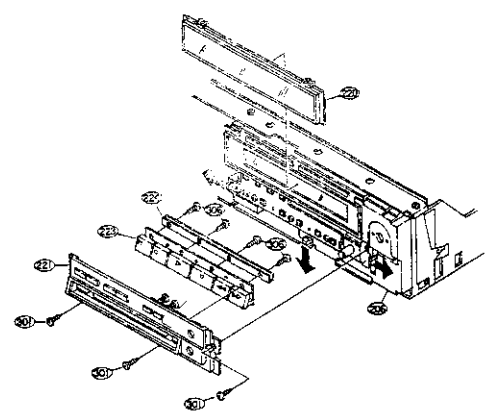
(1) Remove Top Cover (240) and Front Panel (233). (Refer to Section 1)

(2) Unscrew the 3 screws (3 x 8 CBTS P Tight) (301) which secure Front Escutchion.

(3) Front Escutchion (221) is fixed to the Front Chassis (206) by 3 pins; located at right, left, and below, so that Front Escutchion may be removed when these pins are removed in order of right, below and left as indicated by arrow.

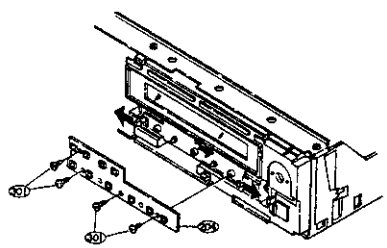
(4) Meter Window (220) may be removed after Front Escuthion 221 is removed.

(5) Control Button (223) should be removed after the 4 screws (306) (2.6 x 8 CBTS P Tight) are removed which secure the Press Bar (224).

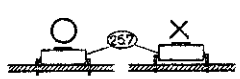


4. How to Remove the Control Circuit Board

(1) Remove the top cover 240 and the front panel 233. (Refer to Section 1)
(2) Remove the front escuchion 221. (Refer to section 3)
(3) Remove the connectors with lead wires which run from the control circuit board 204.
FL counter circuit board side 5P connector CN404
Logic circuit board side 8P connector CN5
(4) By unscrewing 3 screw (3x8 CBTS P tight) 301 holding the control circuit board and loosening the 3 hooks on the control circuit board 204 can be removed.



Note: When replacing the tact switch 257, always check to make sure that it is not floating above the circuit board. If it is floating, the switch will be in the on condition when the set is assembled.



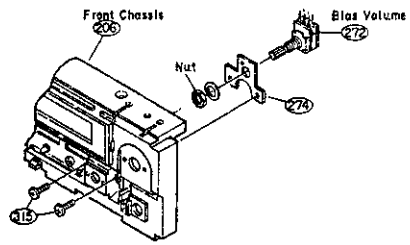
5. How to Remove the FL Meter

(1) Remove the top cover 240 (Refer to section 1)
(2) Remove the connectors on the FL meter circuit board 205.
(3) Remove the 2 screws (307) (3 x 8 CFTS S Tight) which secure FL Meter, Screw (310) (3 x 10 CBS), and washer (3W). Then the FL Meter may be removed.

CAUTION:
During assembly, avoid snagging the Shield Sheet (243), which is located under the Counter/Meter Circuit board (205), on the FL Meter.

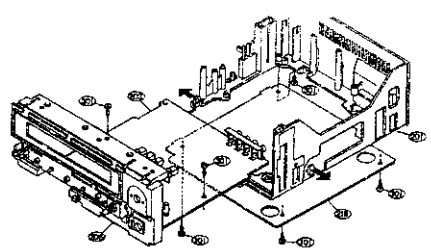
6. How to Remove the Bias Volume

(1) Remove the top cover 240 and the front panel 233. (Refer to section 1)
(2) Remove the angle 210 (Refer to section 2)
(3) Remove the front escuchion 221 and the meter window 220. (Refer to section 3)
(4) Remove the control circuit board 204, and the FL meter 256. (Refer to sections 4, 5)
(5) Unscrew the 2 screws (3 x 10 CBS) 315 holding the Bias Volume plate 274.
(6) Unscrew nat nat holding the Bias Volume.



7. How to Remove the Audio Circuit Board

(1) Remove the top cover 240 and the front panel 233. (Refer to section 1)
(2) Remove the angle 210 (Refer to section 2)
(3) Remove the front escuchion 221 and the meter window 220. (Refer to section 3)
(4) Remove the control circuit board 204, and the FL meter 256. (Refer to sections 4, 5)
(5) Remove the connectors from the audio circuit board 203.
(6) Unscrew the 4 bottom cover holding screws (3x8 CBTS P tight) 301 on the back side of the chassis 201 and remove the bottom cover 218.
(7) Unscrew the screw 301 holding the Audio amp circuit board.
(8) By lifting the front chassis 206 and loosening the 2 hooks on the chassis holding the audio circuit board 203, the audio circuit board can be removed.



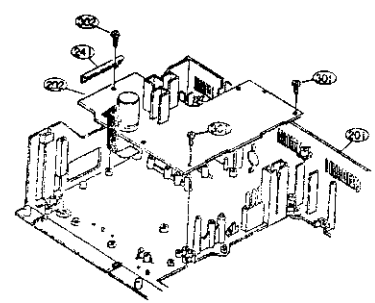
When Separating the Audio Circuit Board by Itself

(9) Unscrew the nut holding the input volume 253 and remove the input volume and the shield bracket 209 toward the rear.
(10) Unscrew the 2 screws (3 x 10 CBS) 315 holding the Bias Volume plate 274 and remove the Bias Volume plate toward the rear.
(11) Unscrew the nut holding the output volume 254.
(12) Remove the spring plate holding the headphone jack 255.
(13) By removing front chassis 206, the audio circuit board can be removed by itself.

Note: Most repairs to the audio circuit board can be performed by removing the bottom cover on the chassis. Refer to the above procedure only when necessary.
When reassembling, follow the procedures in reverse order; however, if each of the various parts are not assembled properly in their respective position, the set cannot be assembled. When assembling, check the work of each step carefully.

8. How to Remove the Logic Circuit Board

(1) Remove the top cover 240. (Refer to section 1)
(2) Remove the various connectors from the logic circuit board 202.
(3) Unscrew the screws (3x8 CBTS P tight) 301 holding the logic circuit board.
(4) Unscrew the screw (3x10 CBTS P tight) 302 holding the P.W.B support 241.
(5) Pull the logic circuit board 202 forward until the logic P.W. board is disconnected from the rear of the chassis 201; it can then be removed.



9. How to Remove the Power Supply Circuit Board

(1) Remove the top cover 240. (Refer to section 1)
(2) Unscrew the 1 screw (3x8 CBTS P tight) 301 holding the bracket 216 of the power supply circuit board 215.
(3) By pulling the power switch lever 230 out of the power supply switch, the power supply circuit board can be removed upwards.

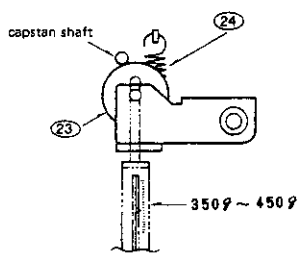
ADJUSTING AND CHECKING THE MECHANISM SECTION

1. Replacing the Pinch Roller 23

Before replacing the pinch roller, clean the tape contact surface of the pinch roller and the capstan shaft.
Most causes of poor tape transport can be traced to dirty pinch rollers and capstan shafts.
The pinch roller 23 can be removed by removing the spring 24 and the slit washer 317.
After replacing, run a padless C-90 tape to check for tape curls at the tape guide section of the head.

2. Chcking the Pressure Force of the Pinch Roller

In the playback mode, hook a spring weight onto the bracket at the center of the pinch roller. After separating the pinch roller from the capstan shaft, allow the pinch roller to contact the capstan shaft again. Check to make sure the spring weight reads between 350–450g when the pinch roller starts to rotate. If it is not within the normal range, replace the pinch roller spring 24.



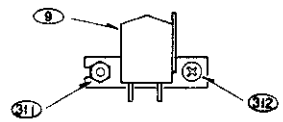
3. Replacing the Record/Playback Head

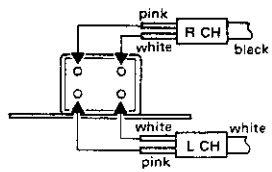
(1) How to remove the R/P HEAD.
  1) Remove securing screw 312 and azimuth adjusting nut 311 from the record/playback head.
  2) Remove the soldered head wire and disassemble the mechanical unit to remove the record/playback head.

(2) How to assemble the R/P HEAD.
  Reverse the above (1) procedures for removing the R/P HEAD.

* Solder the HEAD WIRES according to the diagram.

Note: Be sure to mount the head adjust plate.



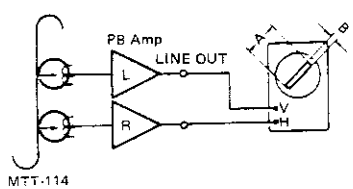


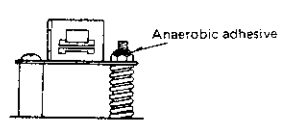
4. Adjusting the R/P HEAD

Azimuth adjustments
Play back the TEAC MTT-114 test tape. Turn the azimuth adjustment nut and adjust so that A of the resurge wave form is maximum and B is minimum.

* After the adjustments, apply anaerobic adhesive on the positions indicated in the diagram.

Note: Only the azimuth adjustment is necessary; no height adjustments are required.



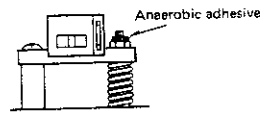


5. Replacing the ERASE HEAD 15

(1) Unscrew the erase head holding screw 312 and the height adjustment nut 311.
(2) By unsoldering the HEAD WIRES can be taken off the mechanism unit.

6. Adjusting the height of the erasing head

(1) Set the jig board of the head adjusting tool (M-300) to the mechanical unit. Turn the height adjusting nut 311 so that the 3.8 mm section on the rod passes through without coming in contact with the tape guide of the erasing head.
(2) After the adjustments, apply anaerobic adhesive on the position indicated in the diagram.



7. Checking for Axis Direction Movements of the Capstan Shaft

Hold the capstan shaft from the front of the mechanism and move it in the axis direction; check to make sure some movement exists.

8. Checking the Take-up Torque

Load the cassette type torque meter. Check to make sure that the torque meter average reading is within 35~75 g-cm during playback. If it is not within this range, check the voltage (5.1 – 5.3V) of the reel motor. If the voltage is low, the torque will be weak; if it is high, the torque will be strong. In addition, check for reel thrust movement in section 9.

9. Adjusting the Reel Thrust Movement

Check to make sure that the reel thrust movement is within 0.2–0.4 mm.

10. Checking the FF and REW Torques

* When using the cassette type torque meter.
  Check to make sure the torque meter indicates more than 70 g-cm at the end of FF and REW.
* When using a modified cassette half.
  Load the modified cassette half; hook the end of the dial tension meter (full scale 100–300 g) onto the triangle section. In the FF (REW) mode, feed the tape in at a rate somewhat slower than the take up speed. Check to make sure the dial tension meter reads more than 60 g-cm.

11. Checking the Back Tension Torque During Record/Playback

Load the cassette type torque meter; check to make sure the torque meter reads between 2~5 g-cm during playback and that there is no unevenness.
If it is not within this range, check the section on adjusting the reel thrust movement; or else replace the spring 26.

12. Checking the FF and REW Times

Load a C-60 cassette tape; check to make sure the tape is fast forwarded or rewound within 70–110 seconds. If it is not within this range, check sections 9 and 11.

13. Checking the Operation of the Erase Prevention, Metal and Chrome Switch Operation Arms

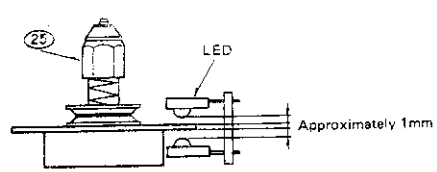
Check to make sure the operation arms 58, 59 operate the switches positively, depending on whether or not there are holes.

14. Checking the EJECT Switch 75

For operation check of EJECT switch 75, in the mechanism unit only, confirmation should be made as to whether or not the switch lever 207 has made the EJECT switch 75 work properly, when cassette box A 68 is closed.

15. Checking the Gap Between the Pulse Detection LED and the Reel Ass'y

Check to make sure the gap between the surface of the shutter section of the reel ass'y and the LEDs is approximately 1 mm.



ADJUSTING THE ELECTRICAL SECTIONS

- **Measuring instruments necessary for adjustments**

(1) Audio signal generator
(2) Variable resistance attenuator
(3) Electronic voltmeter
(4) Oscilloscope
(5) Frequency counter
(6) Adjustment screwdriver
(7) Trap coil adjustment square stick
(8) Test tapes (TEAC MTT-111, MTT-114, MTT-150)
(A-BEX TCC-262)
(DENON DX3/50N, DXM/50, DX7/50, LX)
(DENON CUE level check tape)
(9) Transport Check cassette tape
(COLUMBIA C-120, modified)

- **Cautions on adjusting**

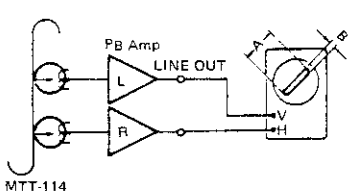
(1) Before adjusting, clean the head surface, capstan and the pinch roller with a gauze or a cotton swab moistened with alcohol.
(2) Demagnetize the R/P HEAD and the E, HEAD with a head eraser.
(3) Completely demagnetize the adjustment screwdriver.
(4) Unless instructed otherwise, set the various controls as follows:
- INPUT volume ..... maximum
- OUTPUT LEVEL volume ..... maximum
- DOLBY NR switch ..... OFF
- BIAS volume ..... Center click position

1. Tape Transport Check

Load the transport check cassette. In the operational mode, illuminate the fixing guides of the R/P HEAD with a lamp and check to make sure the tape edge does not come in contact with the tape guide section.
The tape transport is the most important element in determining the performance of a cassette deck.
Avoid moving the various adjustment screws, nuts, etc., as much as possible. Refer to the pages on "Adjusting and Checking the Mechanism Section" when replacing or adjusting the R/P HEAD.

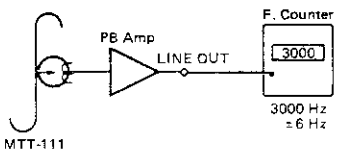
2. Adjusting the Azimuth

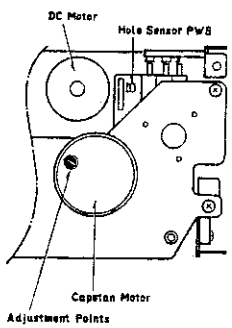
(1) After completing the tape transport check, load the test tape (TEAC MTT-114).
(2) Play back the test tape; adjust the azimuth screw so that section A of the resurge wave form is maximum and section B is minimum.



3. Checking and Adjusting the Tape Speed

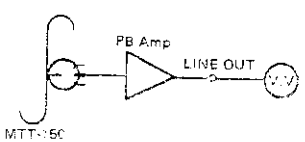
(1) Connect the frequency counter to the LINE OUT terminal and load test tape (TEAC MTT-111).
(2) Playback a test tape. At about halfway through the tape, where the tape transport is stable, adjust the adjustment points on the back of the capstan motor so that the frequency counter will have a reading within the range of 3,000 Hz ± 6 Hz.



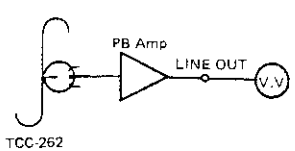


4. Adjusting the Playback Section

(1) Adjusting the playback level
Playback the Dolby standard level test tape (TEAC MTT-150) and adjust RT-102 (L ch), RT-202 (R ch) so that the LINE OUT voltage becomes 0 dB (0.775 V).

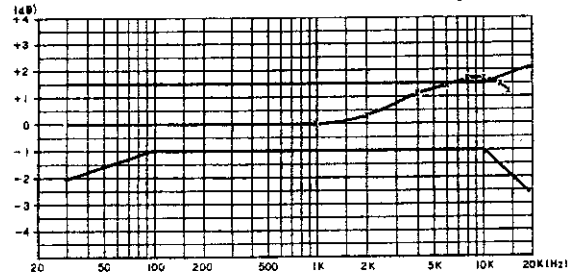


(2) Adjusting the playback frequency response
Playback the test tape (A. BEX TCC-262) and check to make sure that the frequency response meets the specifications in the diagram.



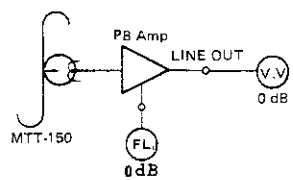
Playback Frequency Response

Tape: A-BEX TCC-262
When using MTT-316 make corrections along.



5. Adjusting the FL Meter

After adjusting the playback level, playback the test tape (TEAC MTT-150) and adjust RT-401 (L ch), RT-402 (R ch) so that the FL meter indicates 0 dB when the LINE OUT terminal level is 0 dB (0.775V).

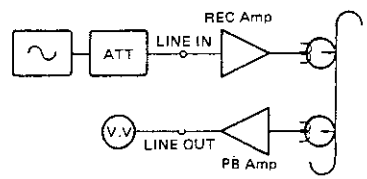


6. Adjustment the CUE Level

(1) Connect the Electronic Voltmeter to the anode side of the diode "D309" and the GND terminal on the Audio PW Board.
(2) Reproducing the CUE LEVEL adjustment tape
Adjust the semi-fixed volume "RT303" (variable resistor) so that the Electronic Voltmeter indicates +2 dB. During play, the time needed to detect the music interval is 2.5 ± 0.5 seconds.

7. Adjusting the Recording Section

(1) Adjusting the record/playback overall frequency response. (METAL)
1) Load the test tape DXM/50, record a signal with an input level of −40 dB, 1 KHz at the LINE IN terminal; play back this recording.
2) Change the frequency of the input signal to 10 KHz, record and playback; adjust RT-106 (L ch), RT-206 (R ch) so that the characteristic standards meet the following diagram when compared to the 1 KHz signal output level.



(2) Adjusting the record/playback overall frequency response (CrO_2)
1) Load the test tape DX7/50N; record a signal with an input level of −40 dB, 1 KHz at the LINE IN terminal; play back this recording.
2) Change the frequency of the input signal to 10 KHz, record and playback; adjust RT-302 so that the 10 KHz signal output level is nearly equal to the 1 KHz signal output level.

(3) Adjusting the record/playback overall frequency response (NORMAL)
1) Load the test tape DX3/50N; record a signal with an input level of −40 dB 1 KHz at the LINE IN terminal; play back this recording.
2) Change the frequency of the input signal to 10 KHz, record and playback; adjust RT-301 so that the 10 KHz signal output level is nearly equal to the 1 KHz singal output level.

KU-5370 COUNTER/METER UNIT

Ref No.	Part No.	Part Name	Remarks
SEMICONDUCTOR GROUP			
IC401	2620440006	BA6146	
402			
IC403	2620580005	μPD554C-136	
TR401	2730245007	2SC2603 (E/F)	
402			
403			
D401	2760049008	1S2076	
403			
~405			
RESISTOR GROUP			
RB401	2462013002	RK99=2B473MP5	47KΩx5 1/8W
RB402	2462010092	RK99=2B104MP4	100KΩx4 1/8W
RB403	2462012032	RK99=2B104MP8	100KΩx8 1/8W
RT401	2116000044	V08PB503	50KΩ B 1/8W
402			
CAPACITOR GROUP			
C407	2531006005	CK45B1H222K	0.0022μF 50V
408			
C409	2531025002	CK45F1H223Z	0.022μF 50V
C402	2544133004	CE04W1C220=	22μF 16V
405			
C406	2544135002	CE04W1C470=	47μF 16V
C404	2544140000	CE04W1V4R7=	4.7μF 35V
C401	2544147003	CE04W1H2R2=	2.2μF 50V
403			
OTHER PARTS GROUP			
L401	2358014034	INDUCTOR	220μH
CN401	2035622037	8P MINI CONNE PIN	
CN402	2035622066	5P MINI CONNE PIN	
404			
CN403	2035622079	7P MINI CONNE PIN	
*	3934010008	FL METER	
	4428211202	METER HOLDER	

• The carbon resistors rated at ¼W are not listed herein.

KU5380 CONTROL UNIT

Ref No.	Part No.	Part Name	Remarks
S451	2124388004	TACT SWITCH	
~460			
CN451	2045413003	8P EI CON WITH WIRE	
CN452	2041630042	5P EI CON WITH WIRE	

KU-5100 MECHANISM P.W.B UNIT

Ref. No.	Part No.	Part Name	Remarks
OTHER PARTS GROUP			
	2031638054	2P E1 CON WITH WIRE	
	2035691000	3P E1 CON WITH WIRE	
	2050185067	6P WIRE HOLDER	
	2129201005	SLIDE SWITCH	
LE4.5	3939178000	LN25RCP	
PTR	3939026000	PN150	
	2041630026	5P EI CON WITH WIRE	
	2123331201	ROTARY ENCORDER	

• The carbon resistors rated at ¼W are not listed herein.

ACCESSORIES GROUP

Ref. No.	Part No.	Part Name	Remarks
	2032101001	2P CONNECTOR CORD	
*	5118279003	INST. MANUAL	EU only
*	5118280005	INST. MANUAL	E1 only
⚠	2033667007	PLUG ADAPTER	

CARTON CASE GROUP

Ref. No.	Part No.	Part Name	Remarks
*	5018291068	CARTON CASE	E1 only
*	5018308061	CARTON CASE	
	5038054007	PACKING	EA only
	5038049009	SUB PACKING	
	5058006048	ENVELOPE	

WARNING:
Parts marked with ⚠ and/or shading have special characteristics important to safety. Be sure to use the specified parts for replacement.

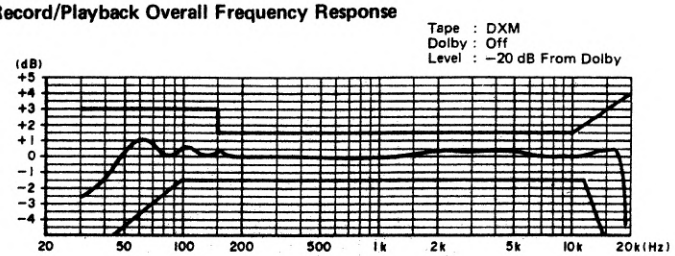
Remarks symbols in the parts list refer to the following countries and areas.
EA: Australia
EK: United Kingdom
EU: U.S.A.
E1: Multiple voltage model
E2: European continent

* Remarks symbols (BK) in the parts list means that the color of the front panel is Black.

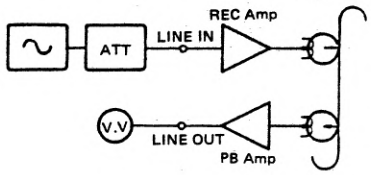
PARTS LIST OF EXPLODED VIEW

Ref. No.	Part No.	Part Name	Remarks
201	4118341602	CHASSIS	
	4118341615	CHASSIS	E1 only
*202	KU-5360	PWR LOGIC UNIT	
*203	KU-5340	AUDIO UNIT	
*204	KU-5380	CONTROL UNIT	
*205	KU-5370	COUNTER/METER UNIT	
*206	1038244316	FRONT CHASSIS	
*207	3388018009	V. MECHA 75 UNIT	
208	4118347101	EARTH PLATE (A)	
209	4148198003	SHIELD BRACKET (V)	
210	4118346115	ANGLE	
⚠ 211	2339074006	POWER TRANS	EU only
	2339073007	POWER TRANS	E1 only
	2339075005	POWER TRANS	
212	4118342410	TRANS BRACKET	EU, E1 only
	4118342407	TRANS BRACKET	E2
⚠ 213	2062002031	AC CORD	EU
	2062019008	AC CORD	EA
	2006019310	AC CORD	E1
	2006031026	AC CORD	EK
	2062024006	AC CORD WITH LABEL	E2, EK
⚠ 214	4450018004	CORD BUSH	EU, E1
	MD-3802	BUSHING	EA
	MD-2982H	CORD BUSH	
⚠ 215	KU-53602	POWER SW PWB	
216	4118343202	POWER SW BRACKET	
217		—	
218	1058089108	BOTTOM COVER	
219	4610162004	FELT PAD	
*220	1438041012	METER WINDOW	
*221	1038264011	FRONT ESC ASS'Y	BK
	1038264008	FRONT ESC ASS'Y	
222	1138174111	PUSH KNOB (A)	BK
	1138174108	PUSH KNOB (A)	
223	1138175217	CONTROL BUTTON ASS'Y	BK
	1138175204	CONTROL BUTTON ASS'Y	
224	4118421001	PRESS BAR	
225	1138179019	PUSH BUTTON (A)	BK
	1138179006	PUSH BUTTON (A)	
226	1138180006	BUTTON SHAFT	
227	4638623004	SPRING	
228		—	
229	4318098108	PUSH SW LEVER	
230	4318101011	P.S. LEVER ASS'Y	BK
	4318101008	P.S. LEVER ASS'Y	
231	4318102010	EJECT KNOB ASS'Y	BK
	4318102007	EJECT KNOB ASS'Y	
232	4318104102	EJECT PLATE	
*233	1038248176	FRONT PANEL	BK
	1038246163	FRONT PANEL	
*234	KU-53601	TIMER SW PWB	
235	1138155143	SLIDE KNOB (B)	BK
	1138155130	SLIDE KNOB (B)	
236	1128112112	VOL. KNOB (A)	BK
	1128112109	VOL. KNOB (A)	
237	1128113111	VOL. KNOB (B)	BK
	1128113108	VOL. KNOB (B)	
238	1128114013	VOL. KNOB (C)	BK
	1128114000	VOL. KNOB (C)	
*239	1038253158	C. WINDOW ASS'Y	BK
	1038253145	C. WINDOW ASS'Y	
240	1028319248	TOP COVER	EA only
	1028319235	TOP COVER	BK
	1028319251	TOP COVER	BK, EA only
	1028319277	TOP COVER	
241	4428055002	P.W.B. SUPPORT	
*242	4428211202	METER HOLDER	
*243	4118450205	SHIELD SHEET	
244	4128747102	SHIELD BRACKET	
245		—	
246	1038249117	SIDE FRAME (L)	BK
	1038249104	SIDE FRAME (L)	
247	1038250119	SIDE FRAME (R)	BK
	1038250106	SIDE FRAME (R)	
248	4170140207	RADIATOR	
249		—	
*250	2129232003	PUSH SWITCH	
251		—	
252	2048114008	4P PIN JACK	
253	2118075006	V.R. 503 KA	
254	2118076005	V.R. 103 KA	
255	2048109013	HEADPHONE JACK	
*256	3934010008	FL METER	
257	2124388004	TACT SWITCH	
258	1290024075	SOFT TAPE	
⚠ 259	2129136028	POWER SW	
*271	KU-53603	LED PWB	
272	2118077004	V.R. 500 ΩB	
273	KU-53701	CUE PWB	
*274	4428226103	BIAS ADJ PLATE	
*275	1298027001	COLOR FILTER	
*276	1290045007	COLOR SHEET	
⚠ 277	2123315023	VOLTAGE SELECTOR	E1 only
301	4737500015	3x8 CBTS (P)	
302	4737501001	3x10 CBTS (P)	
303	4713303916	3x6 CBS	
304	4737002005	3x6 CBTS (S)	
305	4737004003	4x8 CBTS (S)	
306	4737505007	2.6x8 CBTS (P)	
307	4737003004	3x8 CFTS (S)	
308	4737500044	3x8 CBTS (P) (B)	
309	4737503009	4x8 CTTS (P)	
310	4713305014	3x10 CBS	
311	4751106042	WASHER	
315	4713305014	3x10 CBS	
316	4730359014	3x16 CRTS (2)	E1 only

Record/Playback Overall Frequency Response



(4) Adjusting the record/playback levels (METAL)
1) Load a DXM/50 tape and after having recorded a signal of 1 KHz (−40 dB), play it back.
2) Adjust RT-103 (L ch) and RT-203 (R ch) so that the output from the line out terminal has the same value as the output when monitoring the recording.

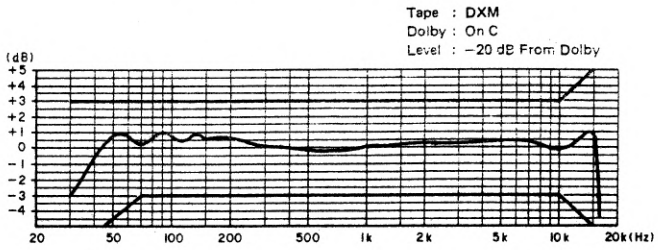


(5) Adjusting the record/playback levels (CrO_2)
1) Load a DX7/50N tape and after having recorded a signal of 1 KHz (−40 dB), play it back.
2) Adjust RT-104 (L ch) and RT-204 (R ch) so that the output from the line out terminal has the same value as the output when monitoring the recording.

(6) Adjusting the record/playback levels (NORMAL)
1) Load a DX3/50N tape and after having recorded a signal of 1 KHz (−40 dB), play it back.
2) Adjust RT-105 (L ch) and RT-205 (R ch) so that the output from the line out terminal has the same value as the output when monitoring the recording.

(7) Checking the Dolby C record/playback overall frequency response
1) Set the DOLBY NR switch to the "C" position.
2) Using the test tapes DXM, perform record/playback in the same manner as 6-(1).
3) Check to make sure that the record/playback overall frequency response meets the specifications in the diagram.

Dolby C Record/Playback Overall Frequency Response



• Beat Interference

Beat interference may result if the unit is used close to an AM tuner. In this case separate the distance between the tuner and the cassette deck.

KU-5360 POWER AND LOGIC UNIT

Ref No.	Part No.	Part Name	Remarks
SEMICONDUCTOR GROUP			
IC1	2620427003	HD74LS138P	
IC2	2620408006	μPD1511C-097	
IC3, 4	2620447009	BA6109U1	
TR1~3	2710113010	2SA999 (F)	
18, 22			
30			
TR4~14	2730245007	2SC2603 (E/F)	
16, 17			
20, 31			
24~28			
TR19	2710105002	2SA966 (Y)	
TR15, 21	2740078031	2SD882 (Q/P)	
29			
TR23	2720055029	2SB772 (Q/P)	
D1, 2	2760049008	1S2076	
4~18			
21, 27			
36			
D20	2760237001	RV06	
22, 23			
31, 32			
39			
D38	2760246005	RB152	
ZD1	2760299052	HZ3B3	
ZD2	2760185027	HZ4B2	
ZD3	2760236073	HZ5B1	
ZD4	2760173039	HZ6B2	
ZD5, 11	2760303003	HZ6C2	
ZD6	2760051038	HZ7B2	
ZD7	2760218046	HZ9B1	
ZD8, 9	2760052082	HZ11A3	
ZD10	2760249015	HZ18-3	
RESISTOR GROUP			
⚠R75	2410163001	RD14B2H121J	120Ω 1/2W
R49	2440079026	RS14B3D270JNBF	27Ω 2W
RB1	2462011088	RK99=2B153MP3	15KΩx3 1/8W
RB2	2462010092	RK99=2B104MP4	100KΩx4 1/8W
CAPACITOR GROUP			
			Ceramic
C1~3	2531022005	CK45F1H222Z	0.002μF 50V
C11, 17	2531024003	CK45F1H103Z	0.01μF 50V
29, 32			
C12, 30	2531025002	CK45F1H223Z	0.022μF 50V
C4	2539014002	CK45=1E683M	0.068μF 25V
C13~16	2531004007	CK45B1H102K	0.001μF 50V
C90	2539014002	CK45=1E683M	0.068μF 25V
C39	2539015001	CK45=1E104M	0.1μF 25V
C7	2533627000	CC45SL1H101J	100PF 50V
C6	2533635005	CC45SL1H221J	220PF 50V
⚠C37	2538010007	CK45=2GAC103P	0.01μF 400V AC
			Electrolytic
C9	2544129005	CE04W1A470=	47μF 10V
26, 28			
34, 38			
C8, 27	2544130007	CE04W1A101=	100μF 10V
31, 33			
C36	2544135002	CE04W1C470=	47μF 16V
C18	2544163003	CE04W1C221M	220μF 16V
C10	2544163032	CE04W1C102M	1000μF 16V
24, 25			
C35	2542078006	CE02W1C472M	4700μF 16V
C21, 22	2544138009	CE04W0E470=	47μF. 16V
C5, 23	2544140000	CE04W1V4R7=	4.7μF 35V
C20	2544165014	CE04W1V471M	470μF 35V
C41	2544132005	CE04W1C100=	10μF 16V
C19	2544147003	CE04W1H2R2=	2.2μF 50V
OTHER PARTS GROUP			
CN1	2042095000	10P EI CON WITH WIRE	
CN2, 4	2032075001	2P CONNECTOR BASE	
CN3	2035622008	3P MINI CONNE PIN	
CN5	2035622037	8P MINI CONNE PIN	
CN6	2045408018	7PEI CON WITH WIRE	
CN7	2041630039	5P EI CON WITH WIRE	
CN8, 9	2035622066	5P MINI CONNE PIN	
CN10	2035622082	6P MINI CONNE PIN	
CN11	2035691013	3P EI CON WITH WIRE	
	2050185038	3P WIRE HOLDER	
	2050185041	4P WIRE HOLDER	
	2050185054	5P WIRE HOLDER	
	2050185070	7P WIRE HOLDER	
CN1	3998031007	CERAMIC RESONATOR	
SW1	2129188005	SLIDE SWITCH	
LD1	3939180001	LED	Red
LD2	3939181000	LED	Green
LD3	3939182009	LED	Amber
	4438875104	LED GUIDE	
	4428055002	P.W.B SUPPORT	
⚠SW1	2129136028	POWER SW	
⚠LF1	2398019002	LINE FILTER COIL	
⚠	FEP1287	FUSE HOLDER	Except Eu
⚠	2061031032	FUSE 0.16A	Except Eu
⚠	2061031045	FUSE 0.25A	EI only
	4118343202	POWER SW BRACKET	

• The carbon resistors rated at ¼W are not listed herein.

WARNING:
Parts marked with ⚠ and/or shading have special characteristics important to safety. Be sure to use the specified parts for replacement.

KU-5340 AUDIO UNIT PARTS LIST

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCTOR GROUP			
IC101	2630262009	LM1122	
201			
IC102	2630263008	LM1123	
202			
IC301	2630189001	M5218L	
305~307			
IC302	2630226003	M5220L	
IC303	2620290007	HD74LS05P	
304			
TR304	2710113010	2SA999 (F)	
315			
317			
TR101	2730245007	2SC2603 (E/F)	
104~106			
201			
204~206			
305~307			
309~314			
316			
*TR301	2730306001	2SC3243 (D/E)	
302			
TR303	2740078031	2SD882 (Q/P)	
TR102	2750043014	2SK381 (C/D)	
103			
202, 203			
D301~305	2760049008	1S2076	
307~315			
RESISTOR GROUP			
			Metal film
*R311	2442036009	RS14B2H3R3JFRF	3.3Ω ½W
			Variable resistor
VR301	2118075006	V1611V—503KA	50KΩA
V302	2118076005	V1620V—103KA	10KΩA
V303	2118077004	V1220V30KB501	500ΩB
RT102	2116000031	V08PB102	1KΩB
202			
RT301	2116000099	V08PB202	2KΩB
303			
RT302	2116000002	V08PB502	5KΩB
RT105	2116000015	V08PB103	10KΩB
205			
RT103	2116000073	V08PB203	20KΩB
104			
203			
204			
RT106	2116000086	V08PB204	200KΩB
206			
CAPACITOR GROUP			
			Ceramic
C102	2533615009	CC45SL1H330J	33PF 50V
202			
144			
244			

Ref. No.	Part No.	Part Name	Remarks
C119	2533627000	CC45SL1H101J	100PF 50V
219			
C143	2531055056	CK45B1H221K	220PF 50V
243			
C117	2531002009	CK45B1H471K	470PF 50V
217			
C135	2531004007	CK45B1H102K	0.001μF 50V
235			
C137	2531005006	CK45B1H152K	0.0015μF 50V
237			
C136	2531007004	CK45B1H332K	0.0033μF 50V
236			
C122	2531008003	CK45B1H472K	0.0047μF 50V
222			
C138	2531063006	CK45B1H562K	0.0056μF 50V
238			
C139	2531009002	CK45B1H682K	0.0068μF 50V
239			
126			
226			
C323	2531024003	CK45F1H103Z	0.01μF 50V
C303	2531025002	CK45F1H223Z	0.022μF 50V
			Electrolytic
C118	2541025002	CE04W1A470=	47μF 10V
218			
301			
302			
304			
305			
311			
312			
320			
C318	2544130007	CE04W1A101=	100μF 10V
C313	2544131006	CE04W1A221=	220μF 10V
C105	2544132005	CE04W1C100=	10μF 16V
205			
113			
213			
115			
215			
121			
221			
128			
228			
133			
233			
134			
234			
141			
241			
319			
321			
C107	2544133004	CE04W1C220=	22μF 16V
207			
129			
229			

Ref. No.	Part No.	Part Name	Remarks
C101	2544140000	CE04W1V4R7=	4.7μF 35V
201			
103			
203			
309			
C317	2549014005	CE04W1H0R1M	0.1μF 50V
C111	2549014034	CE04W1HR15M	0.15μF 50V
211			
112			
212			
132			
232			
C324	2549014021	CE04W1HR33M	0.33μF 50V
C125	2544145005	CE04W1HR47=	0.47μF 50V
225			
C124	2544146004	CE04W1H010=	1μF 50V
224			
310			
315			
316			
C114	2544148002	CE04W1H3R3=	3.3μF 50V
214			
			Film
C145	2551120068	CQ93M1H332J	0.0033μF 50V
245			
C140	2551120084	CQ93M1H472J	0.0047μF 50V
240			
C120	2551120097	CQ93M1H562J	0.0056μF 50V
220			
C123	2551121009	CQ93M1H682J	0.0068μF 50V
223			
C127	2551121012	CQ93M1H822J	0.0082μF 50V
227			
C106	2551121025	CQ93M1H103J	0.01μF 50V
206			
C307	2551072006	CQ93M1H103K	0.01μF 50V
C104	2551121083	CQ93M1H333J	0.033μF 50V
204			
C108	2551122008	CQ93M1H473J	0.047μF 50V
208			
109			
209			
C308	2551074004	CQ93M1H153K	0.015μF 50V
C110	2551080001	CQ93M1H473K	0.047μF 50V
210			
131			
231			
C142	2551083008	CQ93M1H823K	0.082μF 50V
242			
C306	2554078081	CQ93P2A562J	0.0056μF 100V
C130	2561030025	CF93B2A224J	0.22μF 100V
230			

Ref. No.	Part No.	Part Name	Remarks
OTHER PARTS GROUP			
L101	2320071005	DOLBY FILTER	
201			
L104	2328053009	BAND TRAP FILTER	
204			
L103	2358005001	INDUCTOR	8.2mH
203			
*L301	2358005043	INDUCTOR	680μH
L102	2358011008	INDUCTOR	
202			
*T301	2398023001	OSC COIL	
J301	2048109013	HEADPHONE JACK	
J302	2048114008	4P PIN JACK	
*S301	2129232003	PUSH SWITCH	
RL301	2140020003	REED RELAY	
CN301	2035622082	6P MINI CONNE PIN	
CN302	2035622008	3P MINI CONNE PIN	
303			
CN304	2035622040	10P MINI CONNE PIN	
*CN305	2042094001	8P EI CON WITH WIRE	
	2050185038	3P WIRE HOLDER	
	6501850545P	WIRE HOLDER	
	2050185054	5P WIRE HOLDER	

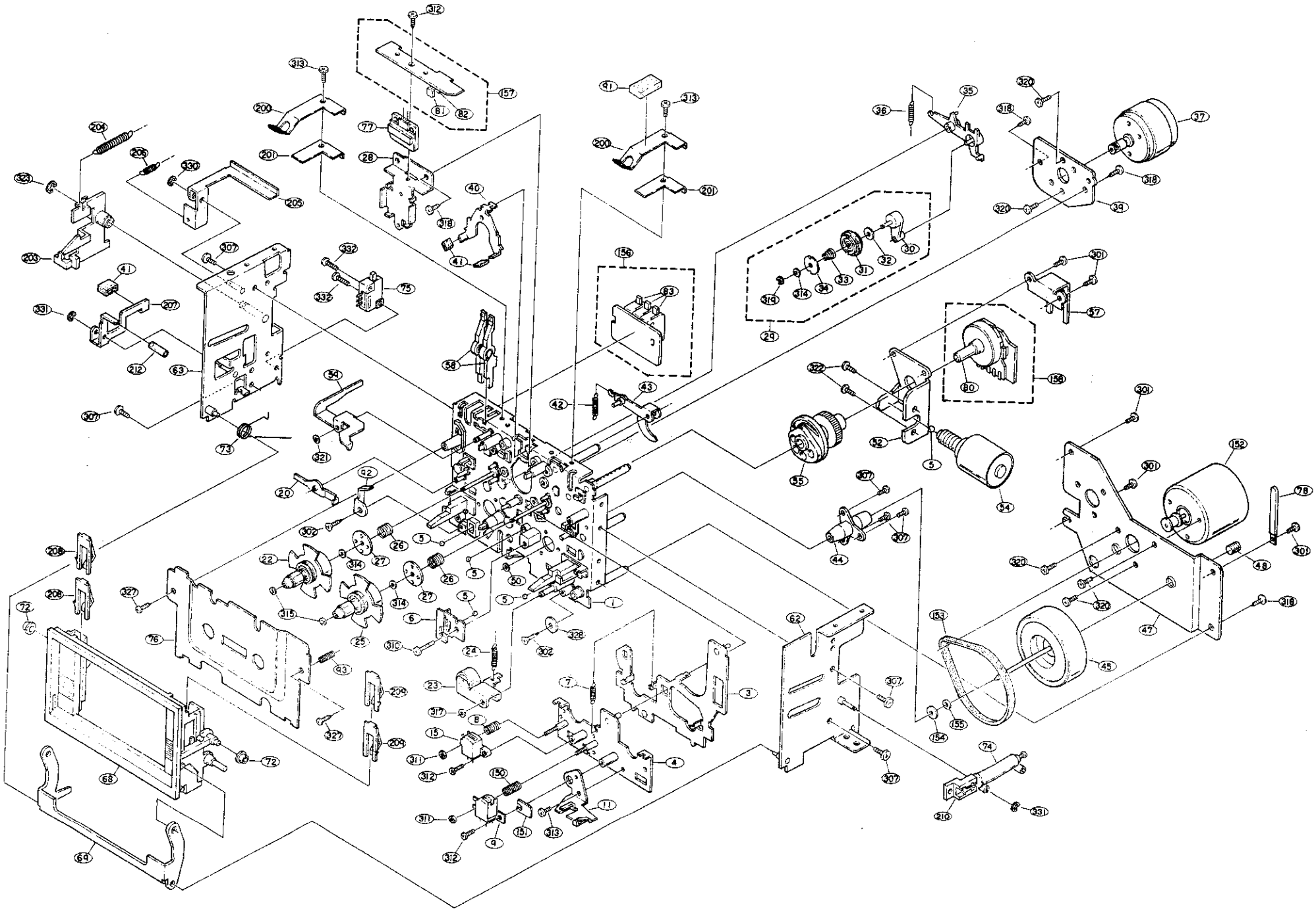
• The carbon resistors rated at ¼W are not listed herein.

PARTS LIST OF MECHANISM 75 UNIT

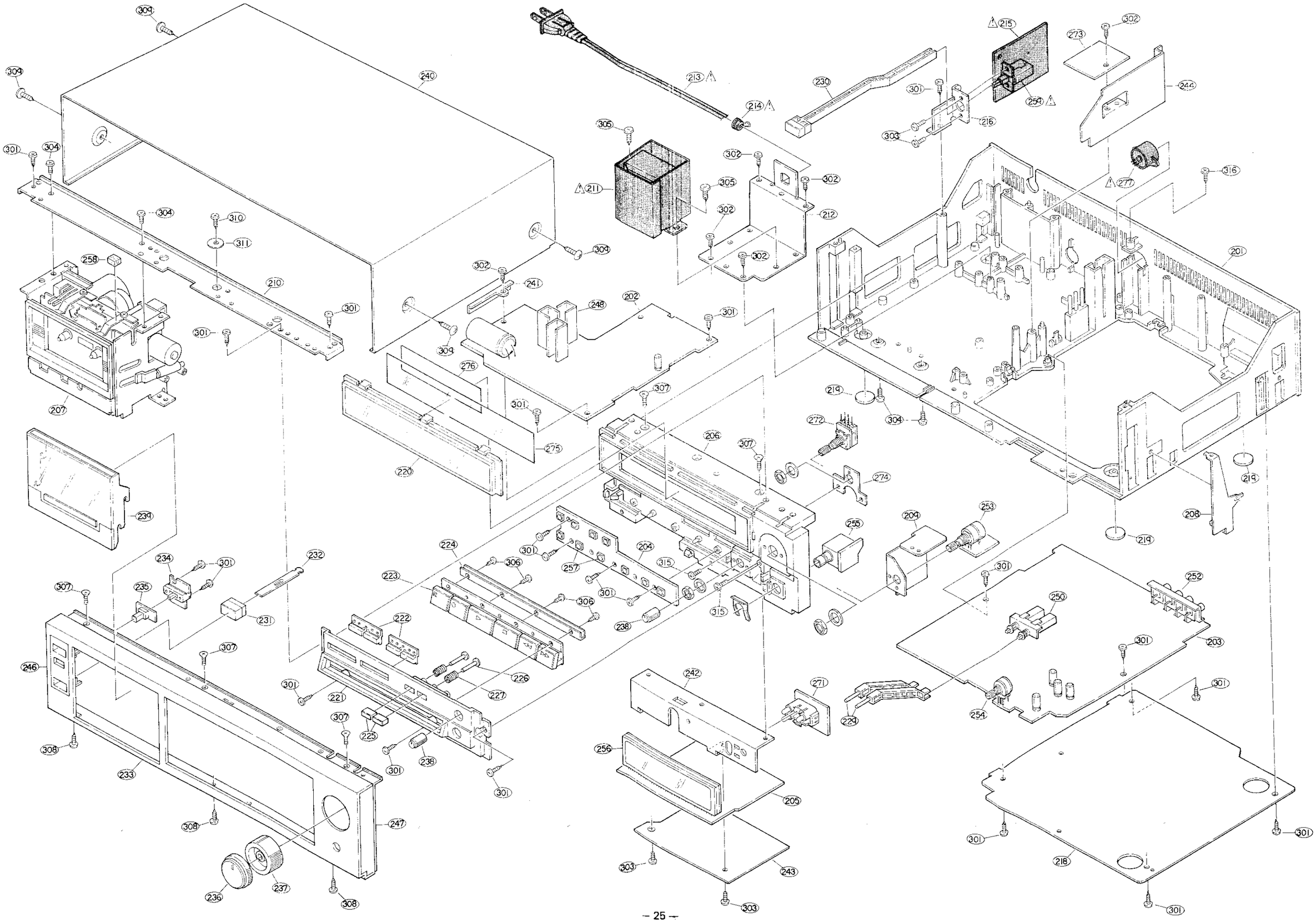
Ref. No.	Part No.	Part Name	Remarks
1	4118350509	MECHA BASE ASS'Y	
3	4318076308	HEAD SLIDER ASS'Y	
4	4318093103	HEAD PLATE ASS'Y	
5	4258011009	STEEL BALL D3	
6	4318080200	BALL GUIDE PLATE	
7	4638230002	SPRING	
8	4638819009	SPRING	
9	3918077009	R/P HEAD	
11	4418994102	CORD HOLDER	
15	3918031003	E HEAD	
20	4338224208	STOPPER	
22	4218320109	REEL ASS'Y	
23	4338194105	P ROLLER ARM ASS	
24	4638231108	SPRING	
25	4218400003	REEL ASS	
26	4638261000	SPRING	
27	4338199003	FRICTION PLATE	
28	4418961300	LAMP HOLDER	
29	4338238414	I. ARM (B) G ASS'Y	
30	4338239109	IDLER ARM (B) ASS'Y	
31	4218324312	IDLER ASS'Y	
32	4618126107	FRICTION FELT	
33	4638625206	SPRING	
34	4428029106	THRUST WASHER	
35	4338236209	IDLER ARM (A) ASS	
36	4638271003	SPRING	
* 37	2178079013	DC MOTOR ASS'Y	
39	4418962309	DC MOTOR FIX PLATE	
40	4318081403	BRAKE	
41	4618127106	BRAKE SHOE	
42	4638234105	SPRING	
43	4338232203	BRAKE ARM ASS'Y	
44	4438648302	METAL HOUSING ASS'Y	
45	4218381203	C. WHEEL (S) ASS'Y	
* 47	4128784301	BACK PLATE	
48	4438771004	CAPSTAN STOPPER	
50	4770090074	WASHER	
52	4418966208	CAM MOTOR HOLDER	
54	2178080303	CAM MOTOR ASS'Y	
55	4248027304	CAM	
57	4428018104	ENCODER BRACKET	
58	4338225304	HOLE SENSOR (1)	
59	4338226400	HOLE SENSOR (2)	
62	4428147208	RIGHT STAY ASS'Y	
63	4428145200	LEFT STAY ASS'Y	
68	1038242305	C. BOX (A)	
69	4338270317	CASSETTE BOX (B)	
72	4318097002	COLLAR	
73	4638236116	BOX SPRING	
74	4698013104	AIR DUMPER	
75	2129200006	SLIDE SWITCH	
76	1448508202	ESC PLATE	
77	3939179009	LN0105GP3	
78	4458028009	CORD HOLDER	
80	2123331201	ROTARY ENCODER	
81	3939178000	LN25RCP	
82	3939026013	PN150C	

Ref. No.	Part No.	Part Name	Remarks
83	2129201005	SLIDE SWITCH	
91	1290024073	SOFT TAPE	
92	4428165002	SLIDER SPACER	
93	4638842005	SPRING	
150	4638819012	SPRING	
151	4428126009	HEAD ADJUST SPACER	
152	2178083106	CP MOTOR SUB ASS'Y	
*153	4238030000	BELT	
154	4770090087	WASHER	
155	4770090016	WASHER	
156	KU-51000	E HOLE SENS PWB	
157	KU-51001	R PULSE SENS PWB	
158	KU-51002	ENCODER PWB	
200	4638829303	CASSETTE SPRING	
201	4428154107	C P SUPPORT	
203	4338269409	HOOK	
204	4638256002	SPRING	
205	4128829004	ANGLE	
206	4638257001	SPRING	
207	4318103006	SW LEVER	
208	1038243304	CASSETTE SUPPORT (L)	
209	1038243317	CASSETTE SUPPORT (R)	
210	4338271109	DAMPER GUIDE	
212	1250021003	VINYL TUBE	
301	4737002005	3x6 CBTS (S)	
302	4737500028	3x8 CFTS (P)	
307	4713202010	2.6x5 CBS	
310	4713802025	2.6x14 CBS	
311	4756020000	2N	
312	4713102013	2x5 CBS	
313	4713201011	2.6x4 CBS	
314	4770090003	WASHER	
315	4751119107	SLIT WASHER	
317	4751121108	SLIT WASHER	
318	4737500002	3x6 CBTS (P)	
319	4761000002	1.5E RING	
320	4713802012	2.6x3 CBS	
321	4751120109	SLIT WASHER	
322	4713801039	2x3 CBS	
323	4761003009	3E RING	
327	4730154028	2x8 CRTS	
328	4751005004	4W	
330	4761002000	2.5E RING	
331	4761001001	2E RING	
332	4713204018	2.6x8 CBS	

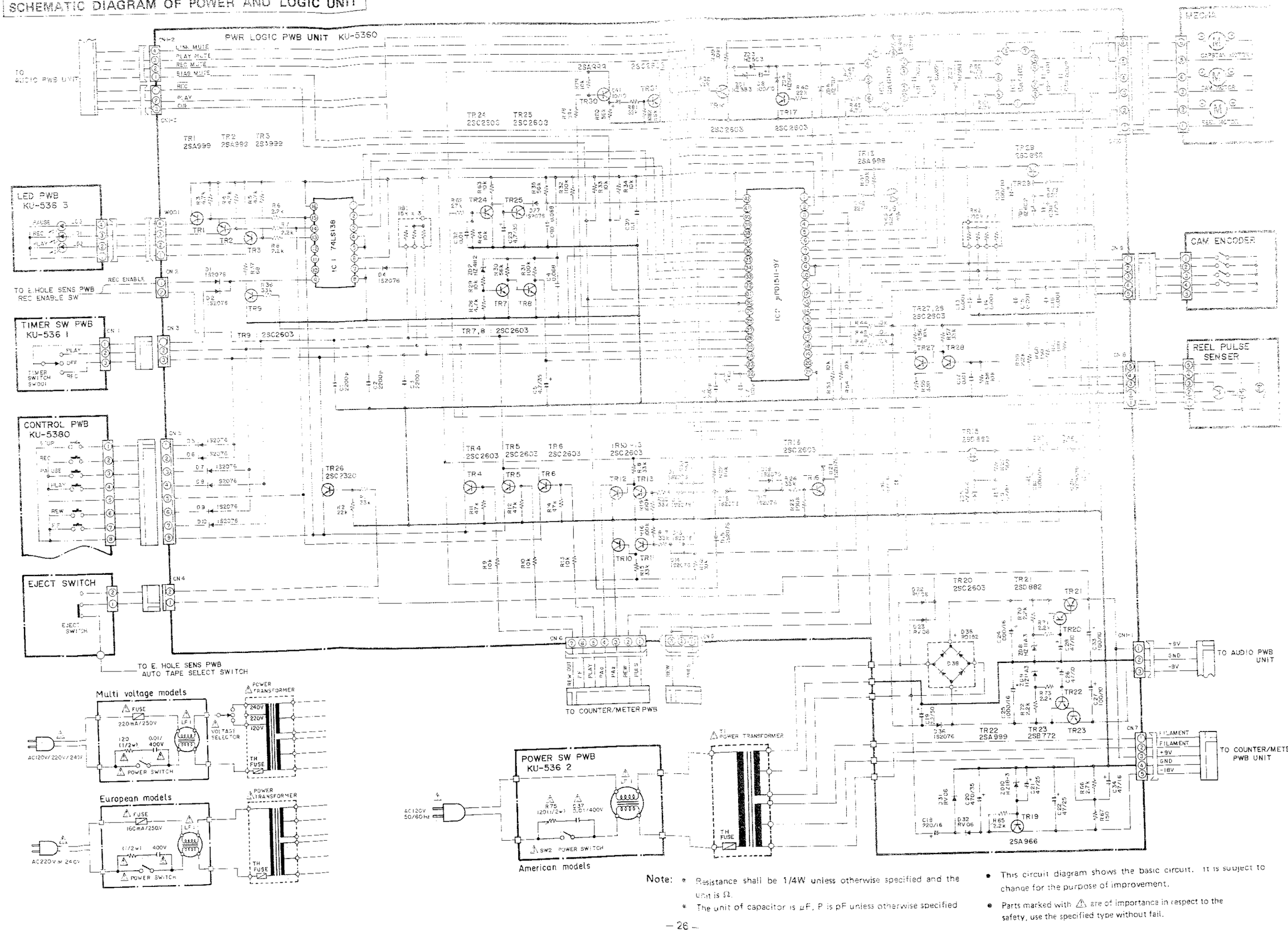
EXPLODED VIEW OF MECHANISM 75 UNIT



EXPLODED VIEW OF CABINET AND CHASSIS GROUP



SCHEMATIC DIAGRAM OF POWER AND LOGIC UNIT

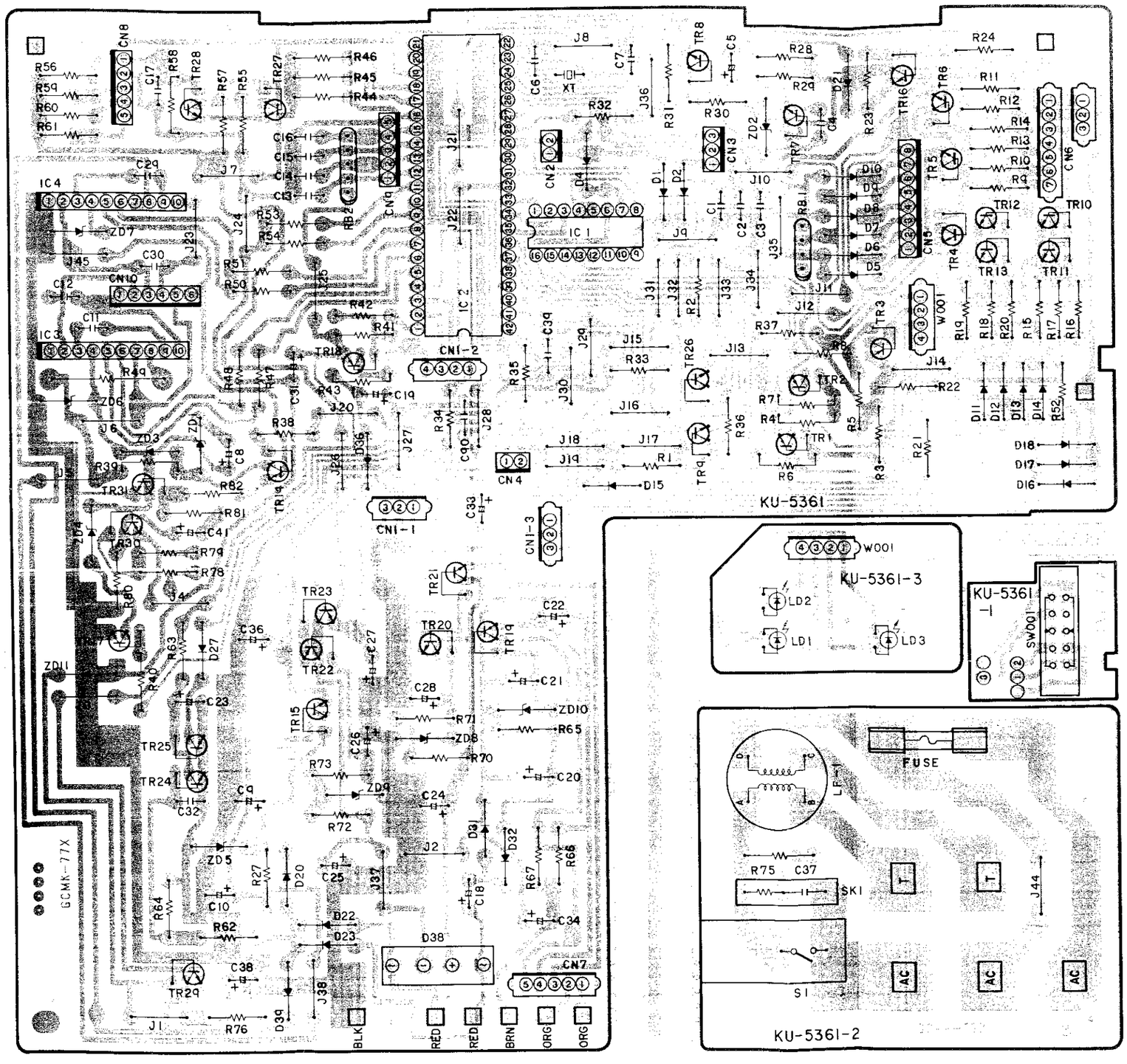


Note:

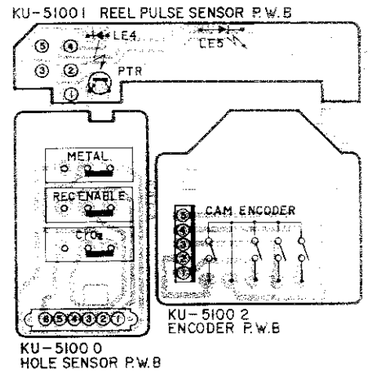
- Resistance shall be 1/4W unless otherwise specified and the unit is Ω.
- The unit of capacitor is μF, P is pF unless otherwise specified
- This circuit diagram shows the basic circuit. It is subject to change for the purpose of improvement.
- Parts marked with ⚠ are of importance in respect to the safety, use the specified type without fail.

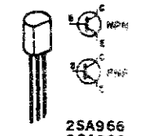
P.W. BOARD

KU-5360 POWER AND LOGIC UNIT

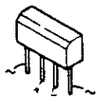


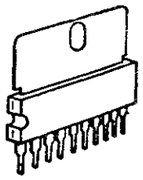
KU-5100 MECHANISM UNIT

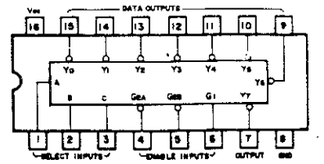




2SB772
2SD882

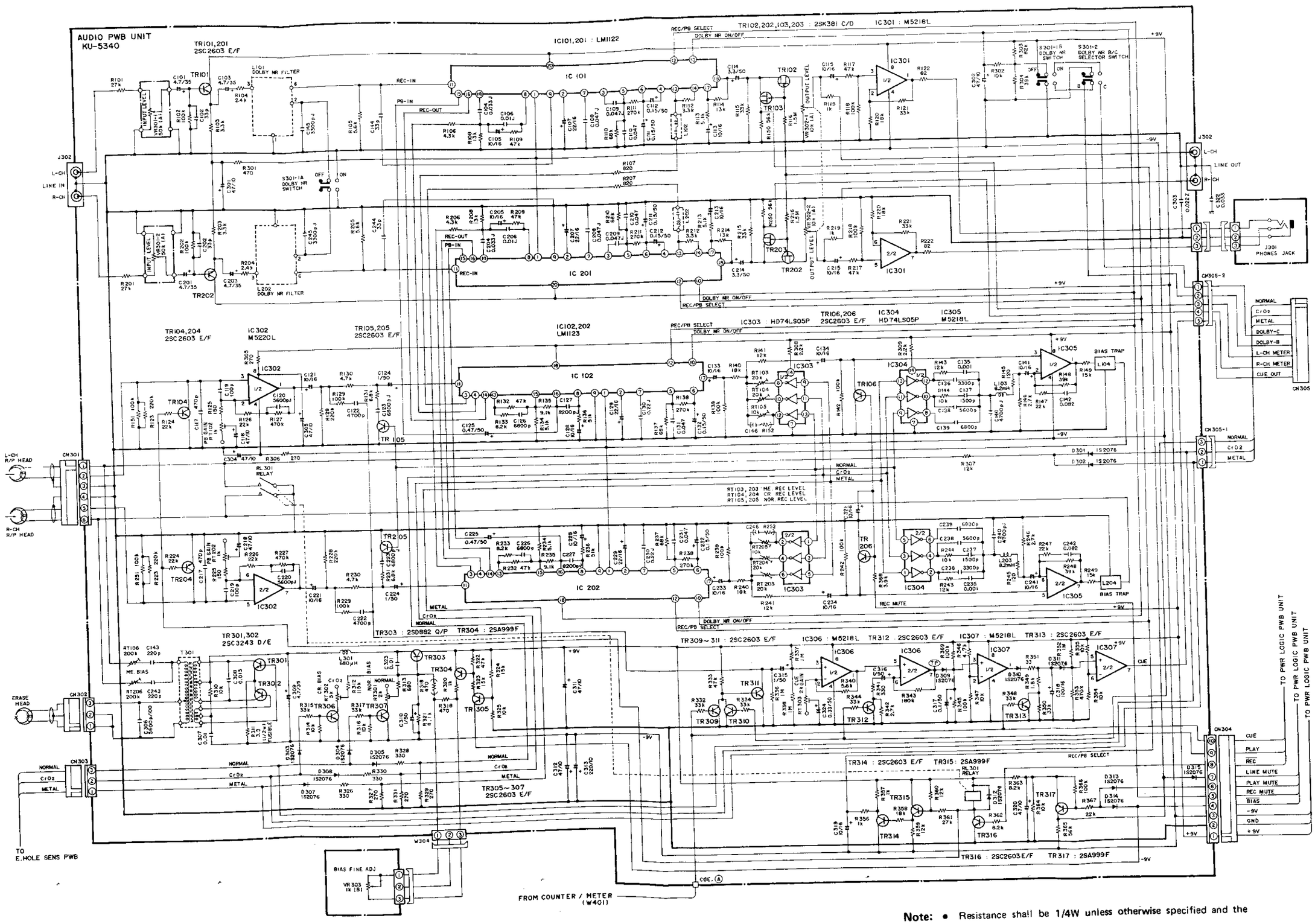






HD74LS138P

SCHEMATIC DIAGRAM OF AUDIO AMP UNIT

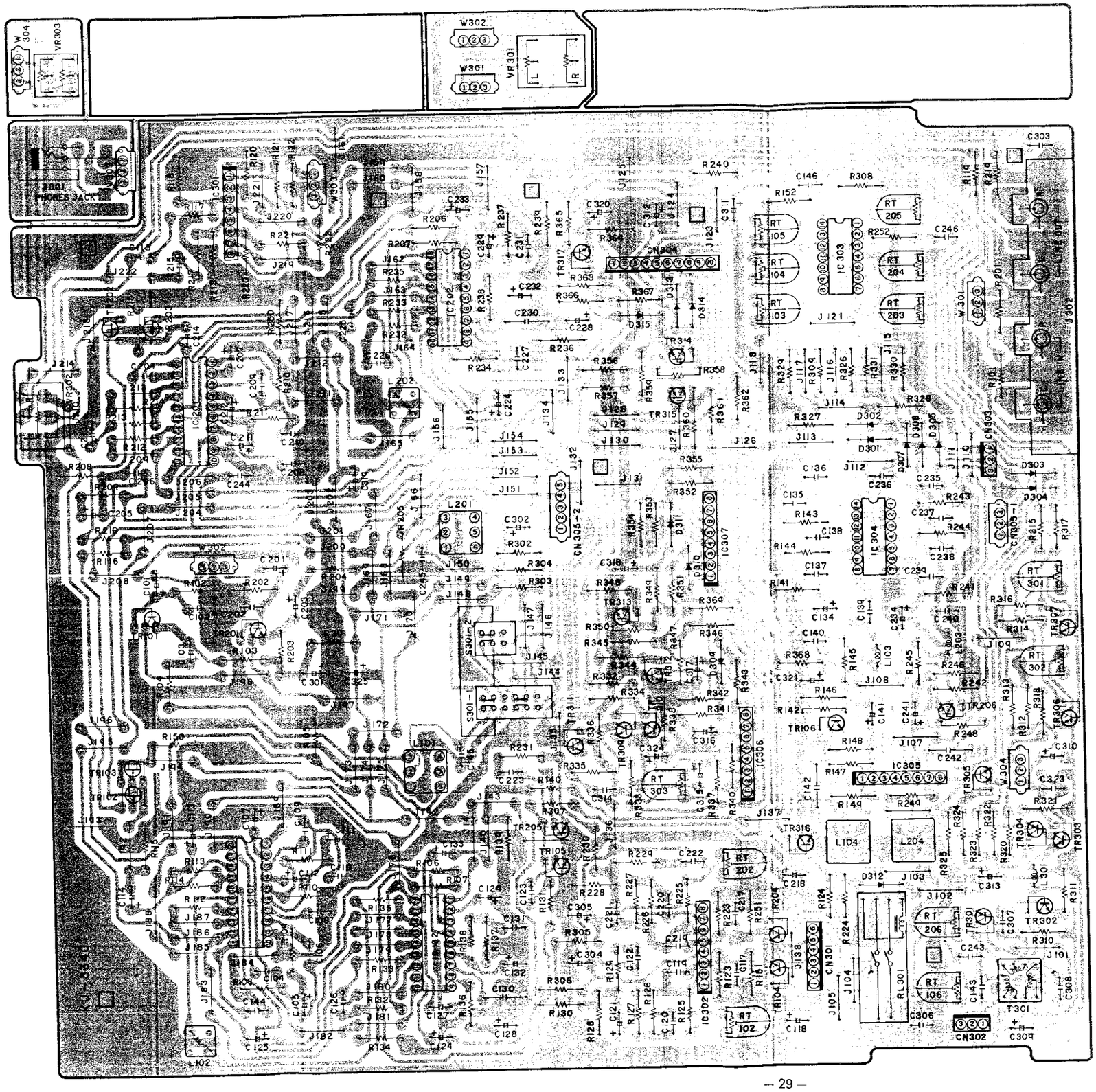


Note:

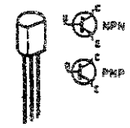
- Resistance shall be 1/4W unless otherwise specified and the unit is Ω.
- The unit of capacitor is μF, P is pF unless otherwise specified.
- This circuit diagram shows the basic circuit. It is subject to change for the purpose of improvement.

P.W. BOARD

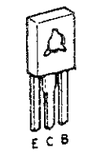
KU-5340 AUDIO AMP UNIT



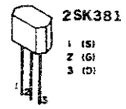
1S2076

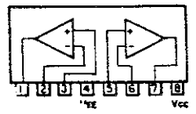


2SA999
2SC2603
2SC3243

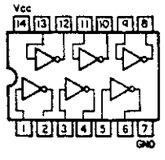


2SD882



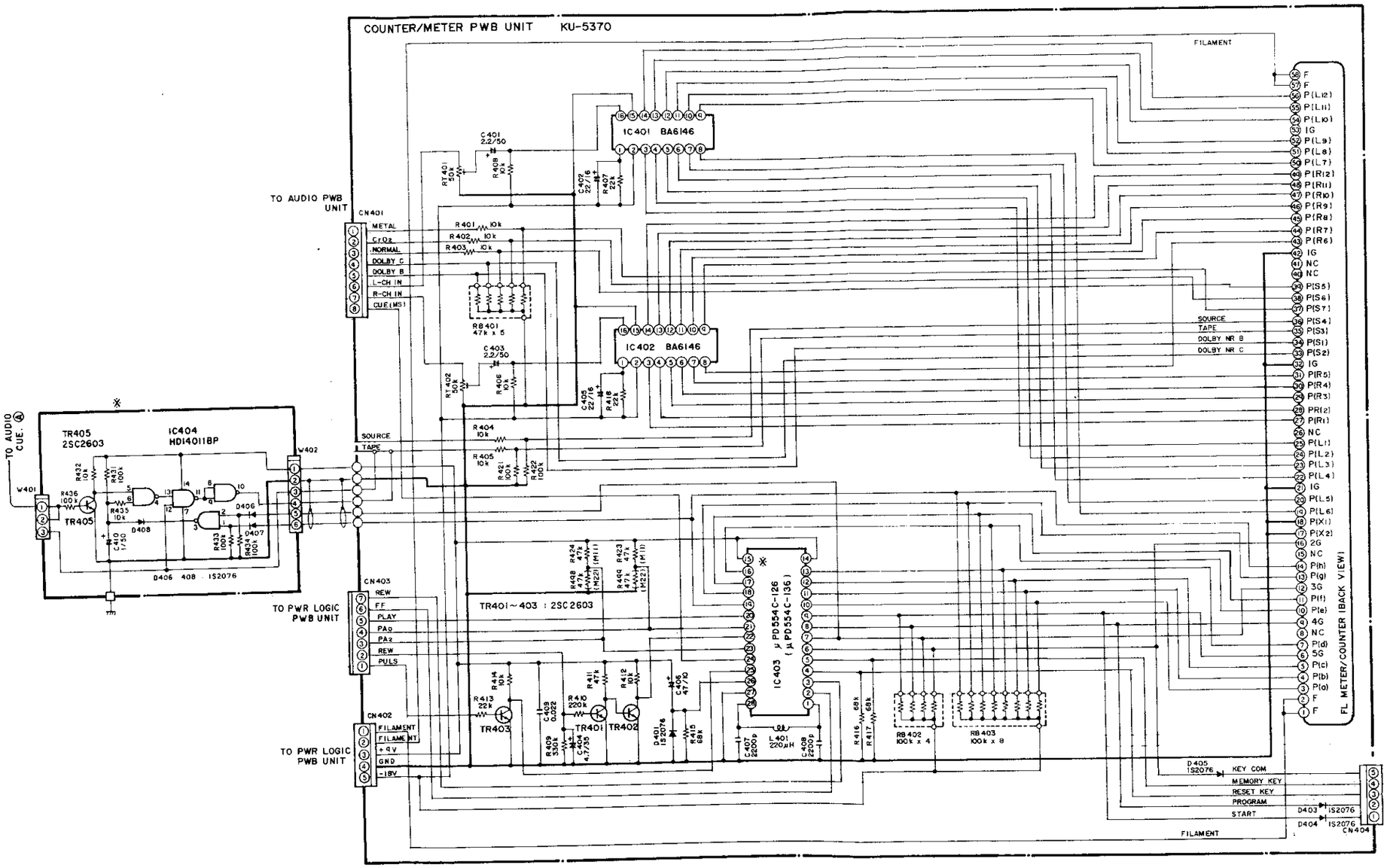


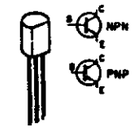
M5218L
M5220L



HD74LS05P

SCHEMATIC DIAGRAM OF COUNTER METER UNIT



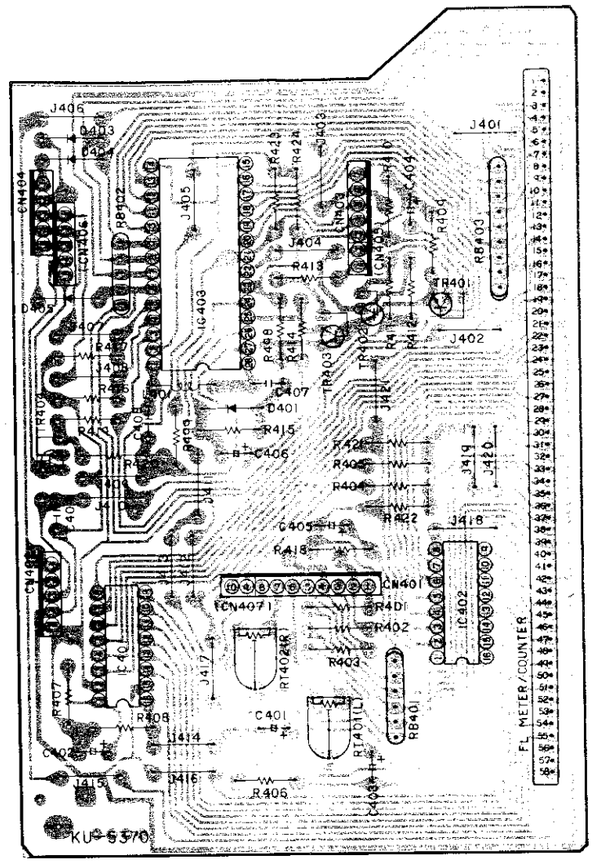


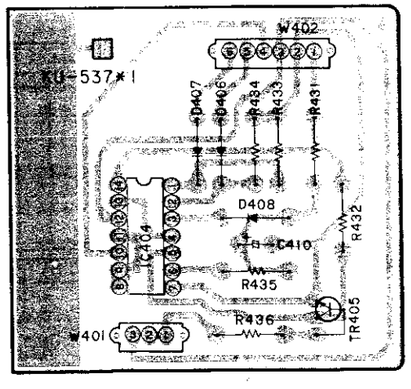
BA6146

Note:
- Resistance shall be 1/4W unless otherwise specified and the unit is Ω.
- The unit of capacitor is μF, P is pF unless otherwise specified.
- This circuit diagram shows the basic circuit. It is subject to change for the purpose of improvement.

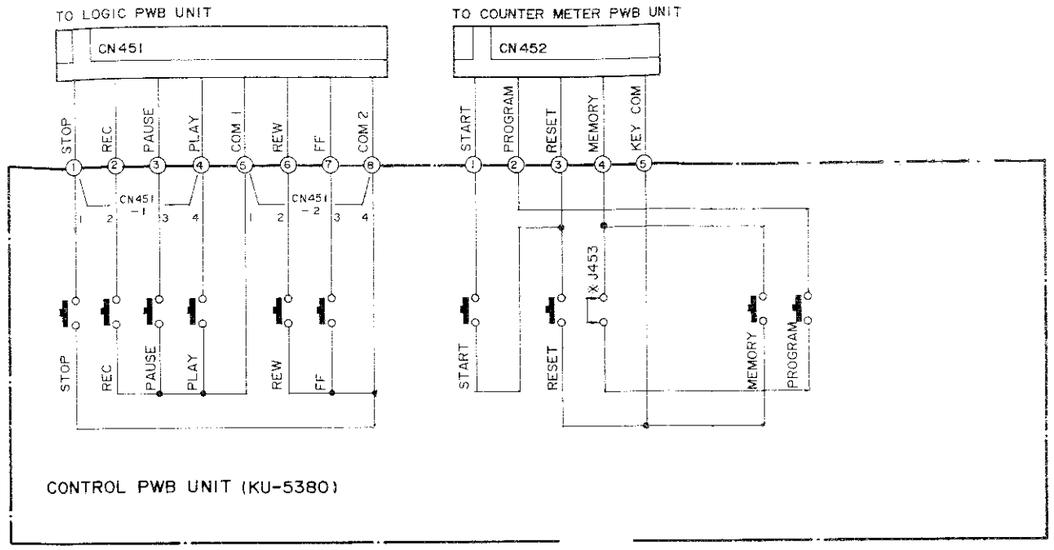
P.W. BOARD

KU-5370 COUNTER METER UNIT

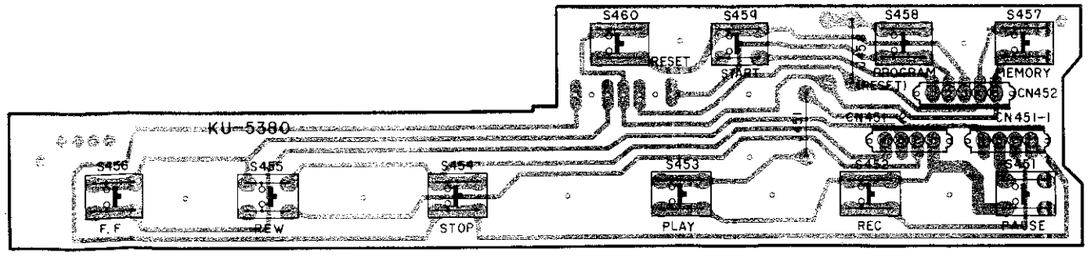




SCHEMATIC DIAGRAM OF CONTROL UNIT



KU-5380 CONTROL UNIT



CONNECTIONS OF P.W. BOARD