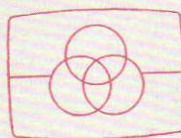


TC-FX5C



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E Model
UK Model
US Model
AEP Model
Canadian Model



'Dolby' and the double-D symbol are the trade marks of Dolby Laboratories. Noise reduction system manufactured under license from Dolby Laboratories.

STEREO CASSETTE DECK

SPECIFICATIONS

Recording system: 4-track 2-channel stereo
Fast-forward and rewind time: Approx. 90 sec. (with C-60 cassette)
Bias frequency: 105 kHz
Signal-to-noise ratio: (NAB, at peak level)

Cassette	Dolby NR switch		
	OFF	B-TYPE ON	C-TYPE ON
TYPE IV (Sony METALLIC)	59 dB	66 dB	72 dB
TYPE III (Sony FeCr)	59 dB	66 dB	72 dB
TYPE II (Sony CD-α)	57 dB	64 dB	70 dB
TYPE I (Sony BHF)	54 dB	61 dB	67 dB


Total harmonic distortion: 1.0% (with Sony METALLIC and FeCr cassettes)

Frequency response
DOLBY NR OFF:


- With TYPE IV cassette (Sony METALLIC)
20 – 19,000 Hz
30 – 17,000 Hz (± 3 dB)
30 – 13,000 Hz (± 3 dB, 0 VU recording)
30 – 17,000 Hz (DIN) (AEP, UK, E model)
- With TYPE III cassette (Sony FeCr)
20 – 19,000 Hz
30 – 17,000 Hz (± 3 dB)
30 – 17,000 Hz (DIN) (AEP, UK, E model)

– Continued on page 2 –

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

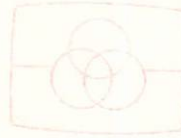
LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET UNE MARQUE  SUR LES DIAGRAMMES SCHÉMATIQUES, LES VUES EXPLOSÉES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.



SONY®

SERVICE MANUAL

- With TYPE II cassette (Sony CD-Q)
- 20 – 18,000 Hz
- 30 – 16,000 Hz (± 3 dB)
- 30 – 16,000 Hz (DIN) (AEP, UK, E model)
- With TYPE I cassette (Sony BHF)
- 20 – 17,000 Hz
- 30 – 14,000 Hz (DIN)



Wow and flutter: 0.04% WRMS
 $\pm 0.14\%$ (DIN)

Inputs: Microphone inputs (phone jacks)
 Sensitivity 0.25 mV (-70 dB)
 For a low-impedance microphone
 Line inputs (phono jacks)
 Sensitivity 77.5 mV (-20 dB)
 Input impedance 50 k ohms

Outputs: Line outputs (phono jacks)
 Output level 0.435 V (-5 dB) at load
 impedance 50 k ohms
 Load impedance over 10 k ohms
 Headphone output
 Output level 31 mV (-28 dB) at a load
 impedance of 8 ohms

General

Power requirements: AEP model: 220 V ac, 50/60 Hz
 (240 V ac adjustable by authorized
 Sony personnel)
 UK model: 240 V ac, 50/60 Hz
 (220 V ac adjustable by authorized
 Sony personnel)
 E model: 110, 120, 220 or 240 V ac
 adjustable, 50/60 Hz

Power consumption: US, Canadian model: 120 V ac, 60 Hz
 24 watts (AEP, UK, E model)
 20 watts (US, Canadian model)

Dimensions: Approx. 430 x 105 x 275 mm (w/h/d)
 ($16\frac{7}{8}$ x $4\frac{1}{8}$ x $10\frac{3}{4}$ inches)
 including projecting parts and controls

Weight: Approx. 6 kg (13 lbs 4 oz)

Supplied accessories: Connecting cord 2
 Head cleaning tips 1 set

0dB = 0.775V

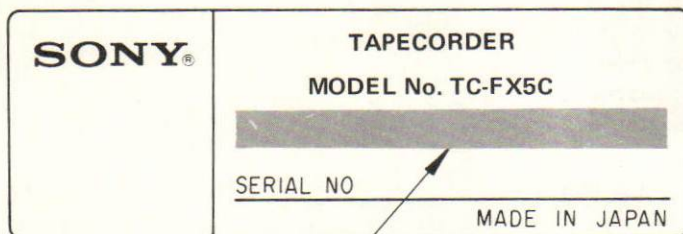
Tape Transport Mechanism Type: TCM-110V1

Note

Appliance conforms with EEC Directive 76/889 regarding interference suppression.

MODEL IDENTIFICATION

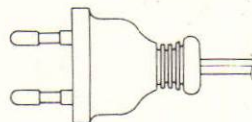
— Specification Label —



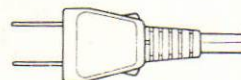
- US, Canadian model: AC 120V 60Hz 22W
- AEP model: AC 220V~ 50/60Hz 22W
- UK model: AC 240V~ 50/60Hz 22W
- E model: AC 110, 120, 220, 240V~ 50/60Hz 22W

— Power Cord —

E1 model: euro-plug 1-555-734-00



E2 model: parallel-blade plug 1-551-473-00

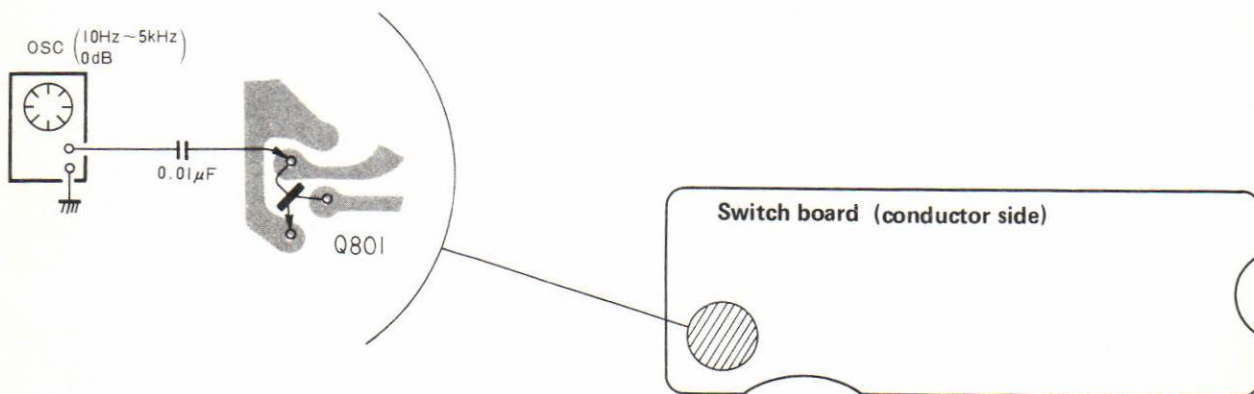
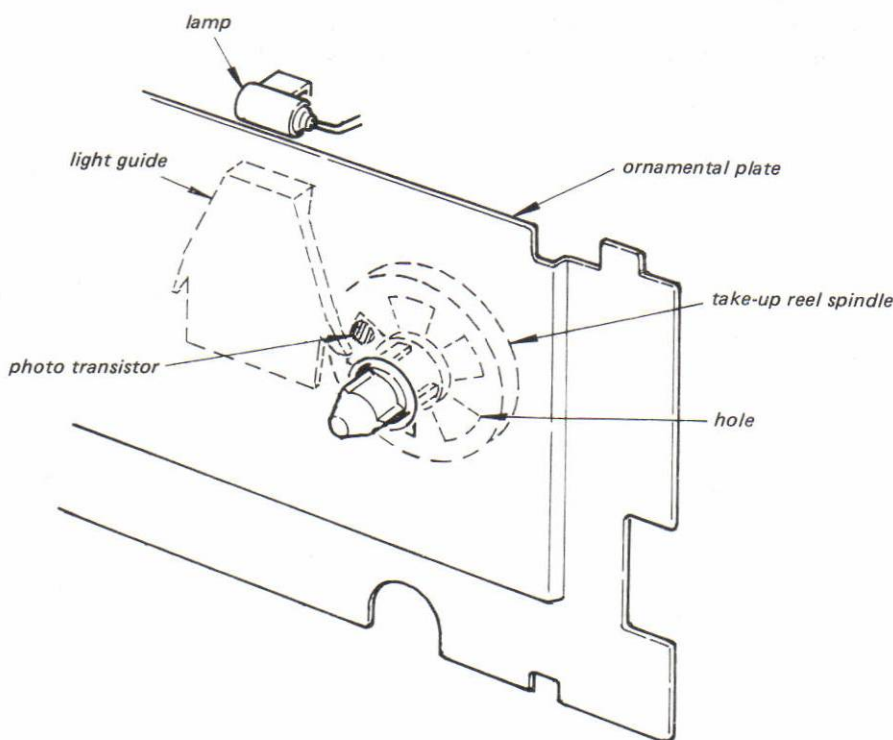


SERVICING NOTE

Shut-Off Detection and Precaution On Repairing

In this set, the shut-off detection is made optically. The take-up reel spindle has the five holes. The light of the lamp received by the light guide is intermittently applied to the photo transistor by means of the rotation of the reel spindle. The pulse generated by the photo transistor Q803 is amplified by Q801 and is fed to the mechanism control IC501.

Accordingly, when it is necessary to repair the unit after removing the ornamental plate, connect an af oscillator to the base of Q801 as shown below, so as not to operate the shut-off mechanism.



Handling Precautions for MOS ICs

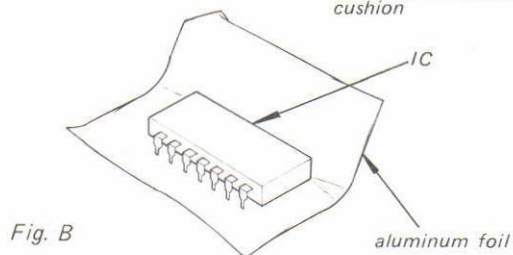
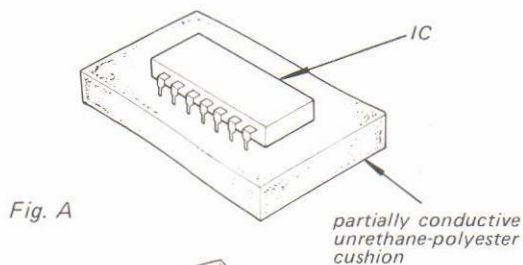
Generally, the insulation resistance of the oxide layer in MOS IC structures is very high, and the oxide layer is very thin. Because of this, it is possible that the static voltages usually present on clothes and the human body will be enough to generate a potential difference across the insulator, high enough to cause a breakdown of the insulating layer.

The following precautions should be taken while handling these ICs.

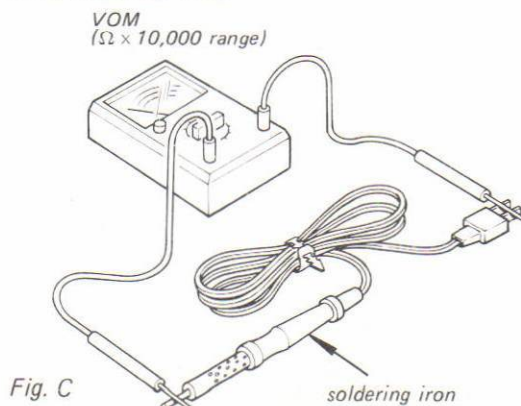
(Particular care should be taken under conditions of low humidity.)

Precautions in Replacing MOS ICs

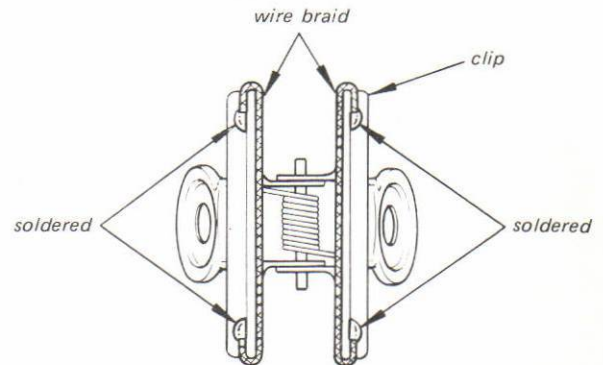
1. Store new ICs by inserting them into a urethane-polyester cushion (which is somewhat conductive), or wrapping it in aluminum foil, so that all the pins are at the same potential. (The ICs should be stored in that manner until mounted on the circuit board.)



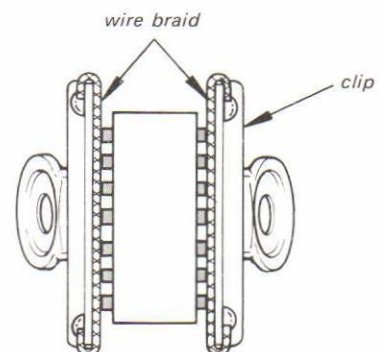
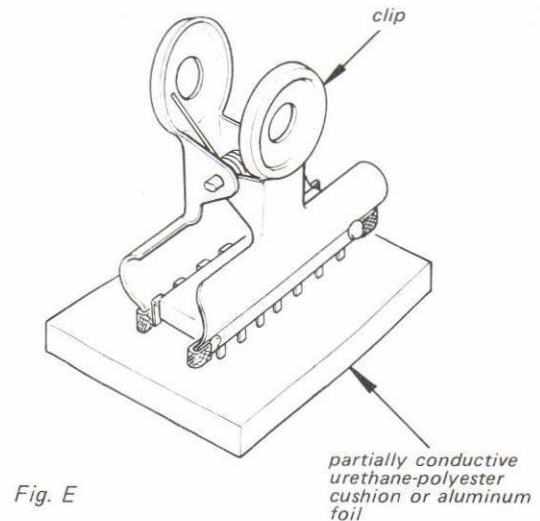
2. Check the soldering iron for possible power-line leakage current. Make sure that there is no leakage path by connecting an ohmmeter to the tip of the soldering iron and the plug as shown in Fig. C. If there is a leakage path, use some other soldering iron.



3. Equalize any potential difference between the clothes, the tools in use, the work bench, the set being worked on, and the packaged IC by touching them all in succession with the hands or a conductive wire or tool.
4. The following are effective methods for handling ICs that remove the potential difference across the oxide layer.
 - Use a paper clip modified by soldering in a wire braid insert.

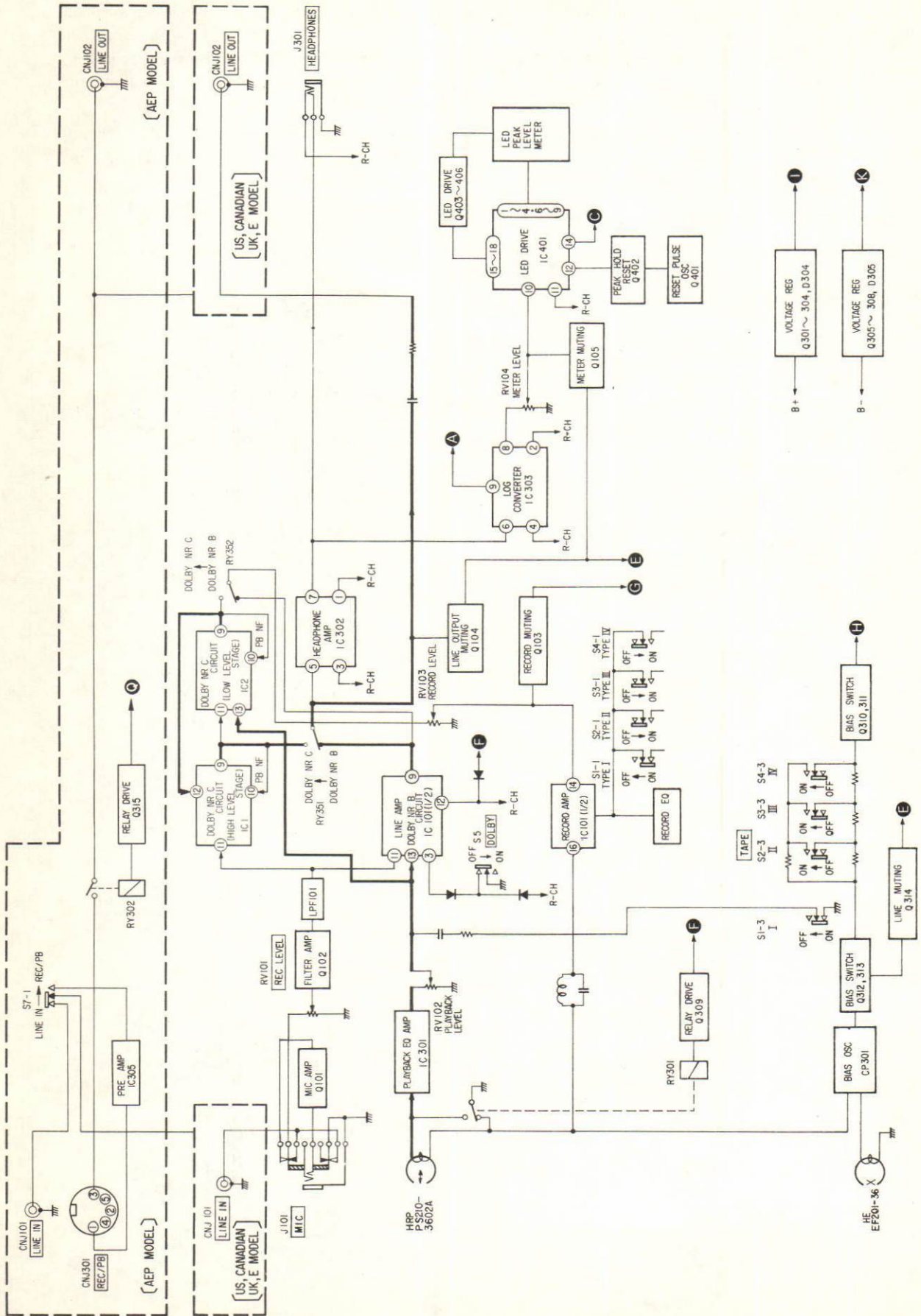


Make sure that there is no solder on the inside.



Make sure that all the pins are in contact with the wire braid (all the pins will then be at the same potential.).

- Audio Amp Section -



-- R - CH --
SAME AS L - CH

- Take a short length of fine bare wire and wind it around the IC so that it shorts all the pins of the IC, while it is still in the urethane-polyester cushion or aluminum foil. This ensures that all the pins are at the same potential.

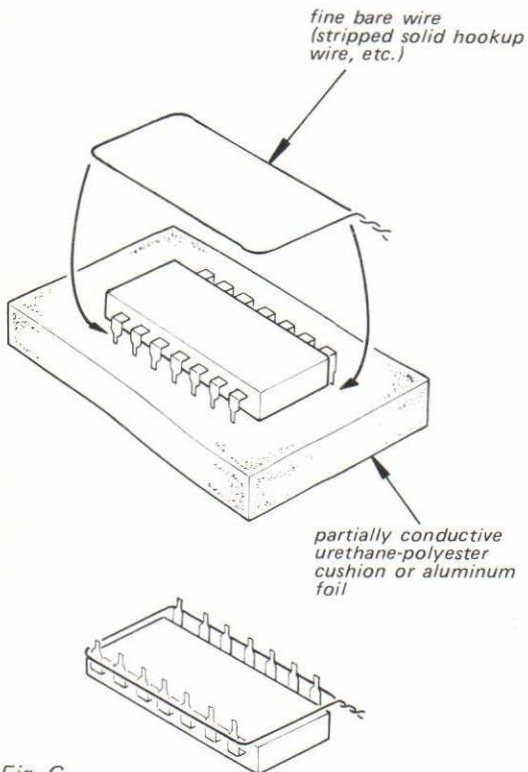


Fig. G

- When it is necessary to handle the IC with the fingers, do not touch any pin, and hold the IC at the ends of its plastic-package case as shown in Fig. H.

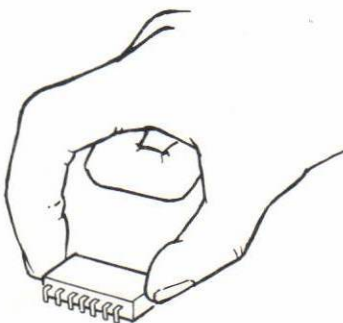


Fig. H

5. Method of Mounting

Insert the IC while holding it with the modified clip, and solder all the pins with the clip still shorting the pins. (Similarly, solder all the pins while the bare shorting wire is still wound around them.). Remove the clip or the bare shorting wire only after all the pins have been soldered.

Precaution while Checking C-MOS ICs

The C-MOS ICs (Complementary MOS) are MOS ICs that have their output sections made up of N-channel and P-channel push-pull stages to increase their speed of operation. If the output terminal of these ICs comes into contact with B+ or B- voltage, then the FET which is ON at that time will either become shorted or open.

This is valid for all the output sections that are connected together by the interconnections. Even the circuits that are physically separated (and not on the same board) can be destroyed simultaneously.

Example:

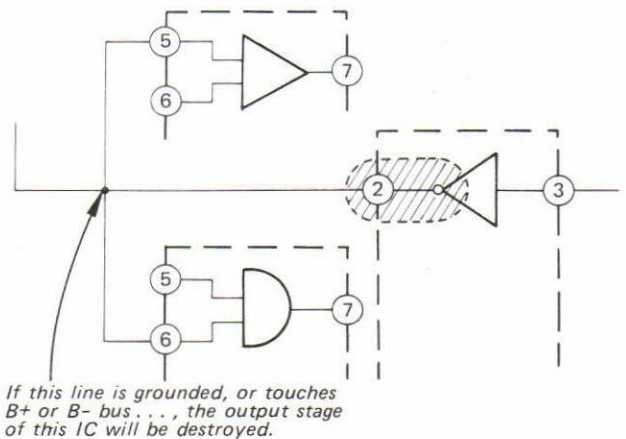
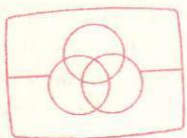


Fig. I

SECTION 1 OUTLINE

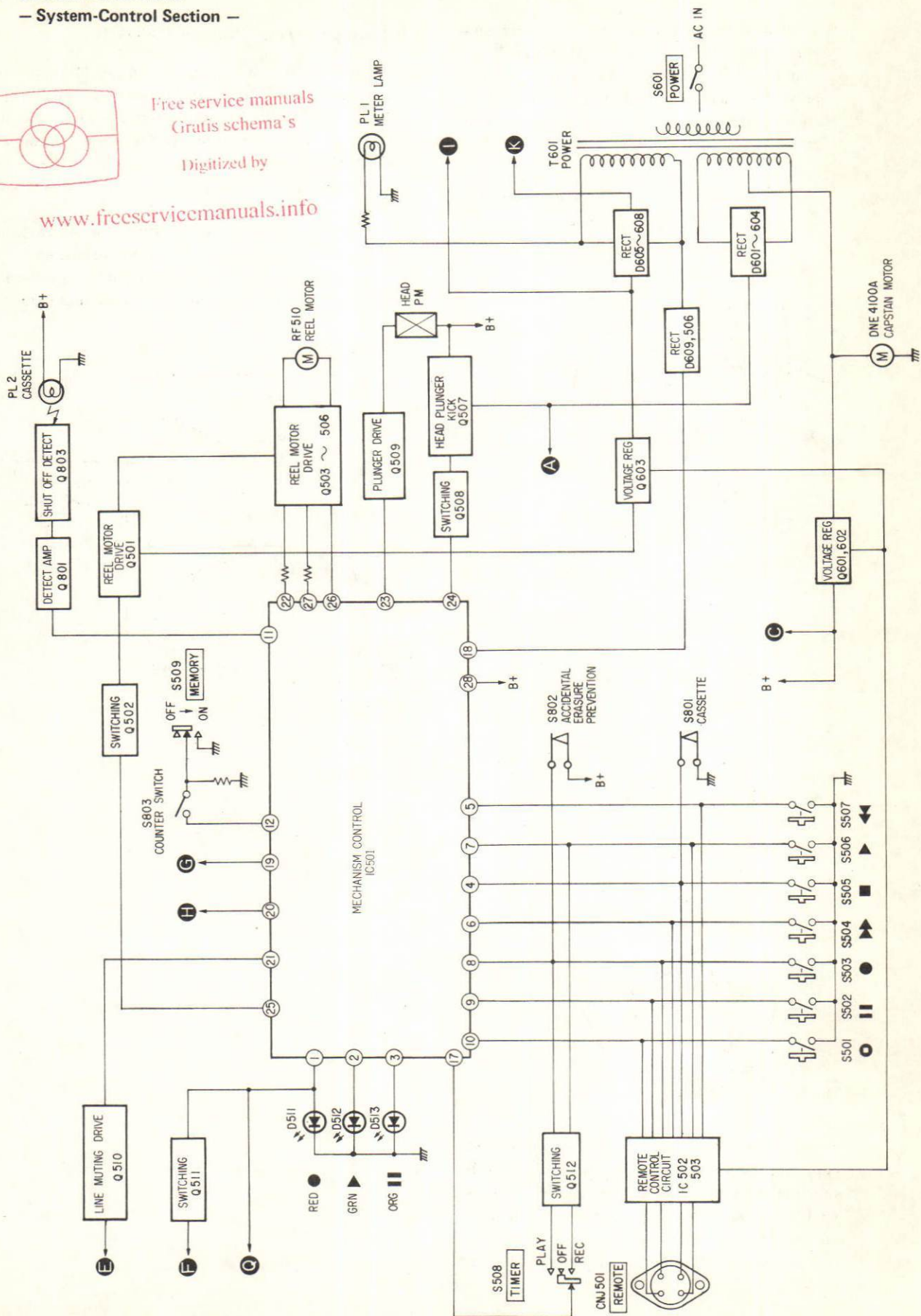
1-1. BLOCK DIAGRAMS - System-Control Section -



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1-2. CIRCUIT OPERATION

This set is equipped with an LED peak program meter, which indicates the input output signal level (as a bar graph).

The following explanations describe the operation of each of the circuit.

1. IC401 Input Circuit.

Input signal A (waveform A) is applied to IC303 in the LOG converter circuit. By the characteristic of a diode, the input signal is logarithmically compressed and waveform A changes into waveform B in IC401.

The peak of signal B is detected and smoothed and it is dc voltage (waveform C). And then it is applied to terminal 11 of IC401. Q205 controls the input current which is applied to IC401.

2. LED Indication Circuit

The LEDs turn on when the anode (D~G) and the cathode (H~O) signals drop to a LOW level at the same time.

ex) LINE OUT output -3dB

D, F : LOW level

waveform H - O : anode, cathode: LOW level

L-CH/R-CH : LEDs 1~8 turn on (See Diagram 1.)

LED MATRIX DIAGRAM

anode signal \ cathode signal	L-CH		R-CH	
	D	E	F	G
H	1	9	1	9
I	2	10	2	10
J	3	11	3	11
K	4	12	4	12
L	5	13	5	13
M	6	14	6	14
N	7	15	7	15
O	8	16	8	16

Diagram 1.

(When either two of the signals D-G and of H-O drop to LOW level, the LEDs shown in the diagram turn on.)

3. Peak Hold Reset Circuit

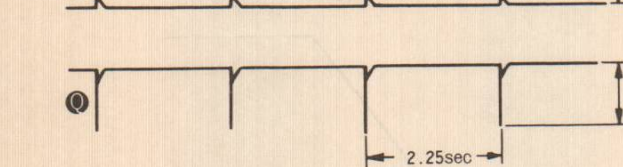
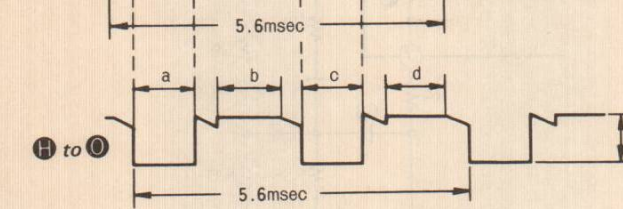
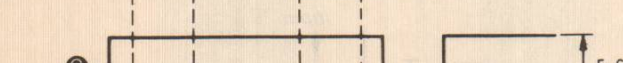
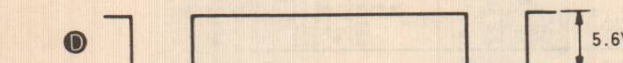
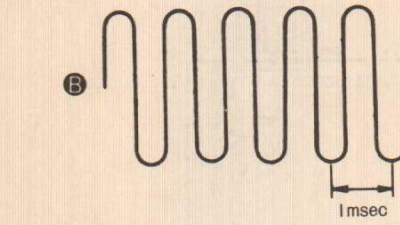
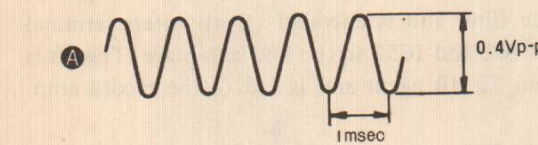
The trigger pulse generated by Q401 (PUT: Programmable Unijunction Transistor) is applied to the base of Q401. The reset signal is applied to the reset terminal 12 of IC401 at intervals of 2.25 seconds and the peak level is reset.

Measuring Condition

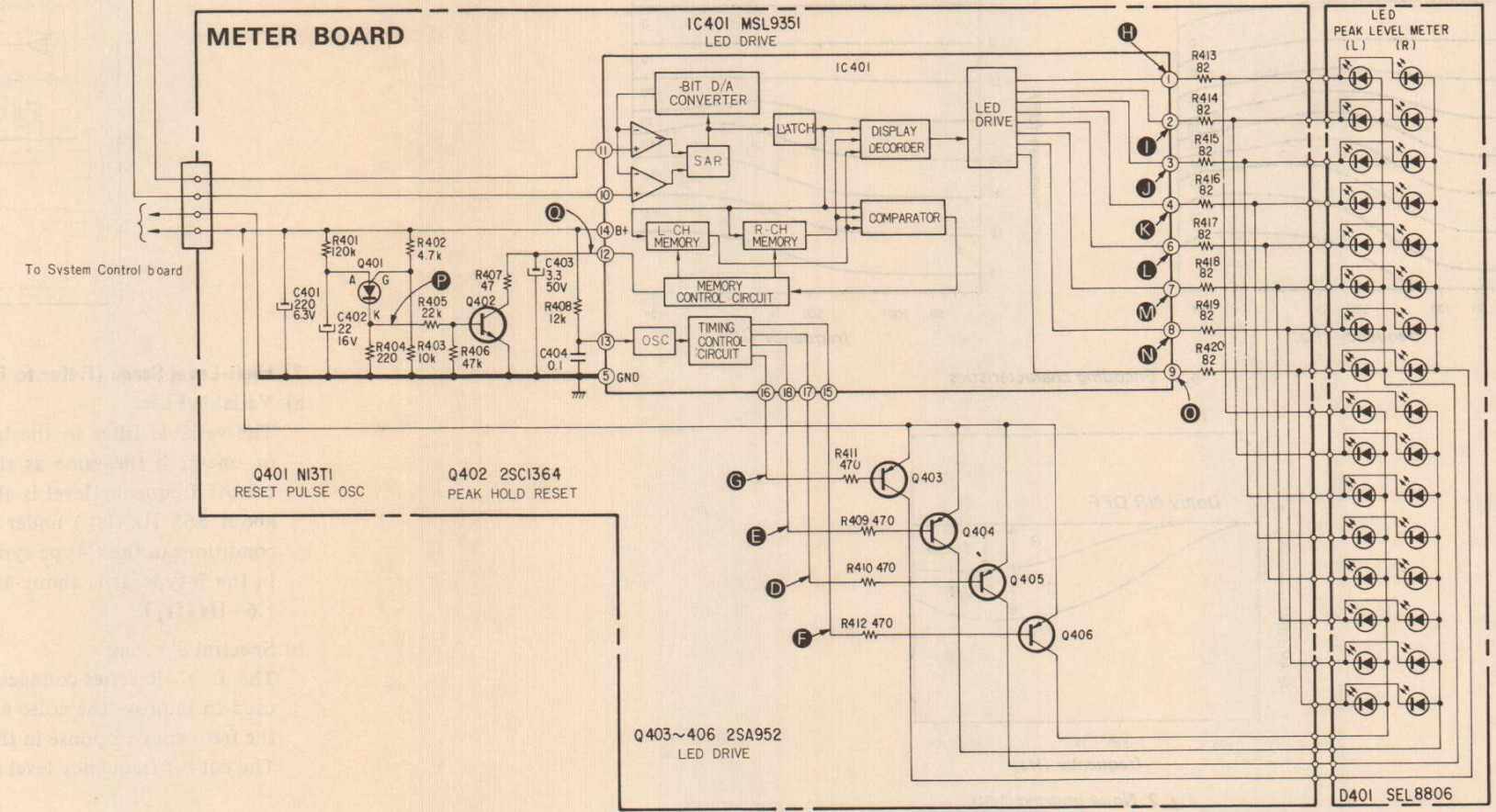
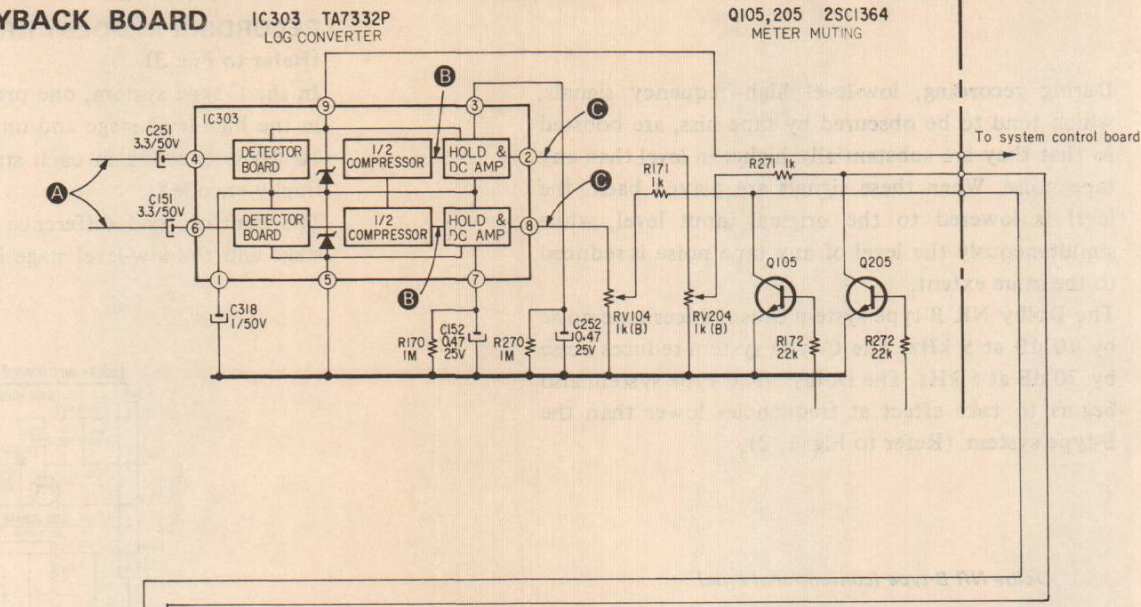
LINE IN : 1kHz, 0.25V (-10dB)

LINE OUT : 1.1V (+3dB)

Mode : record/forward



RECORD/PLAYBACK BOARD



DOLBY NR (NOISE REDUCTION) SYSTEM

Until recently there have been just two types of Dolby NR system: the A-type for professional use, and the B-type, a simplified version of the A-type, employed by most consumer-grade cassette decks. Now, a third type of Dolby NR system is available, the C-type. The C-type system reduces tape noise much more effectively than the B-type system. This set can be used both of the B-type and the C-type by switching. Simply set the TYPE switch to the B position when playing back a tape recorded using the Dolby NR B-type system. Set to C for tape recorded using the C-type system.

During recording, low-level high-frequency signals, which tend to be obscured by tape hiss, are boosted so that they are substantially higher in level than any tape noise. When these signals are played back, the level is lowered to the original input level, while simultaneously the level of any tape noise is reduced to the same extent. The Dolby NR B-type system thus reduces tape noise by 10 dB at 5 kHz. The C-type system reduces noise by 20 dB at 5 kHz. The Dolby NR C-type system also begins to take effect at frequencies lower than the B-type system. (Refer to Fig. 1, 2)

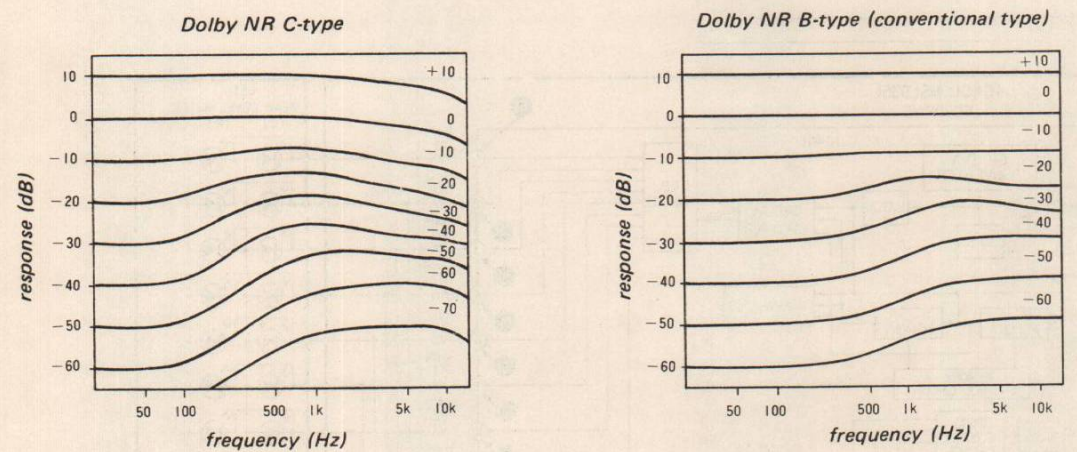


Fig. 1 Encoding characteristics

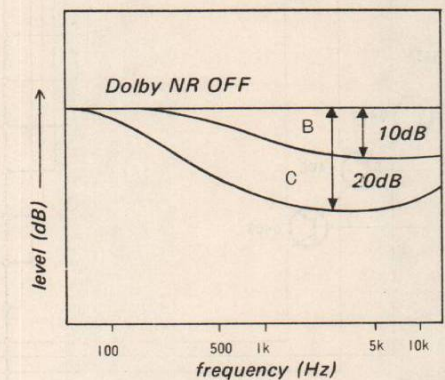


Fig. 2 Noise improvement

RECORDING IN DOLBY NR C-TYPE SYSTEM (Refer to Fig. 3)

In the C-type system, one processor (CX174) is used in the high-level stage and one in the low-level stage. 10 dB is encoded in each stage level, thus 20 dB is finally encoded. The control level difference between the high-level stage and the low-level stage is 12 dB. During record-

ing, input signals pass through the MPX filter, then are applied to terminal 11 of IC1 and IC51 in the high-level stage. The signal which passes through the variable filter and is encoded 10 dB enters terminal 11 of IC2 and IC52 in the low-level stage. Then it is encoded 10 dB again and is fed to the record amp.

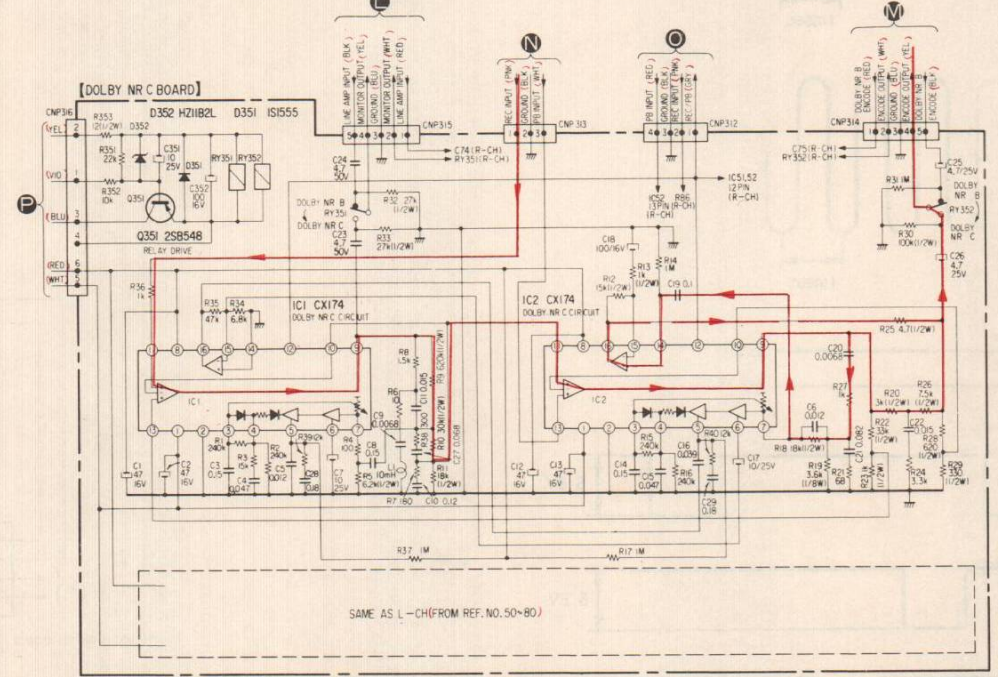


Fig. 3

1) High-Level Stage (Refer to Fig. 4)

a) Variable Filter The variable filter in the high-level stage consists of one-path the same as the B-type system. The cut-off frequency level is about 180 Hz (ft1) and about 568 Hz (ft2) under the lowest level signal conditions in the C-type system. In the B-type, it is about 458 Hz (ft1) and about 1.64 Hz (ft2).

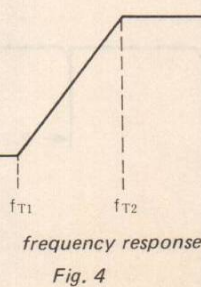
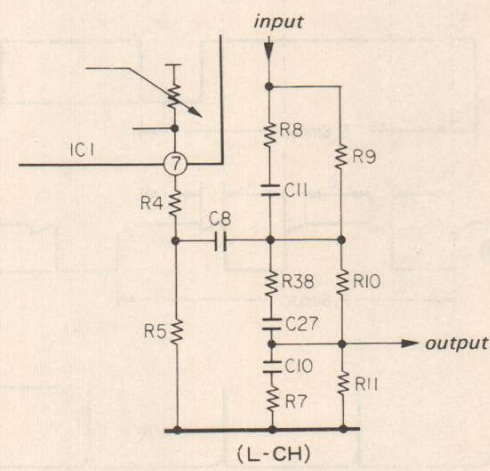


Fig. 4

b) Spectral Skewing The L-C-R series-connected resonance circuit is used to improve the noise modulation and to skew the frequency response in the high-level. The cut-off frequency level is 20 kHz.

2) Low-Level Stage

a) Variable filter (Refer to Fig. 5) The variable filter in the low-level stage consists of two-paths (the main and the sub) the same as a standard circuit. The cut-off frequency level is identical to that of the high level stage.

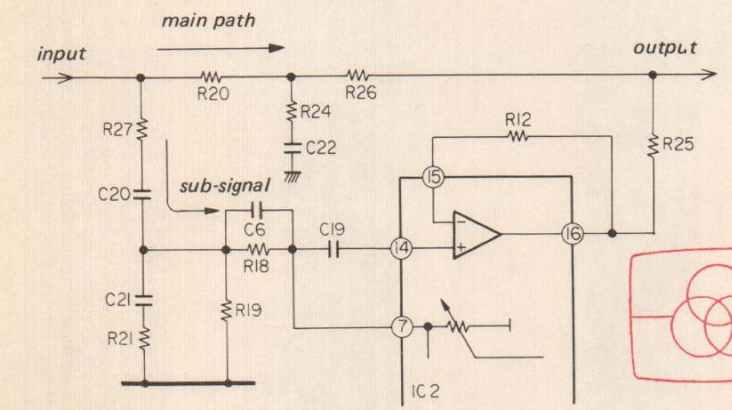
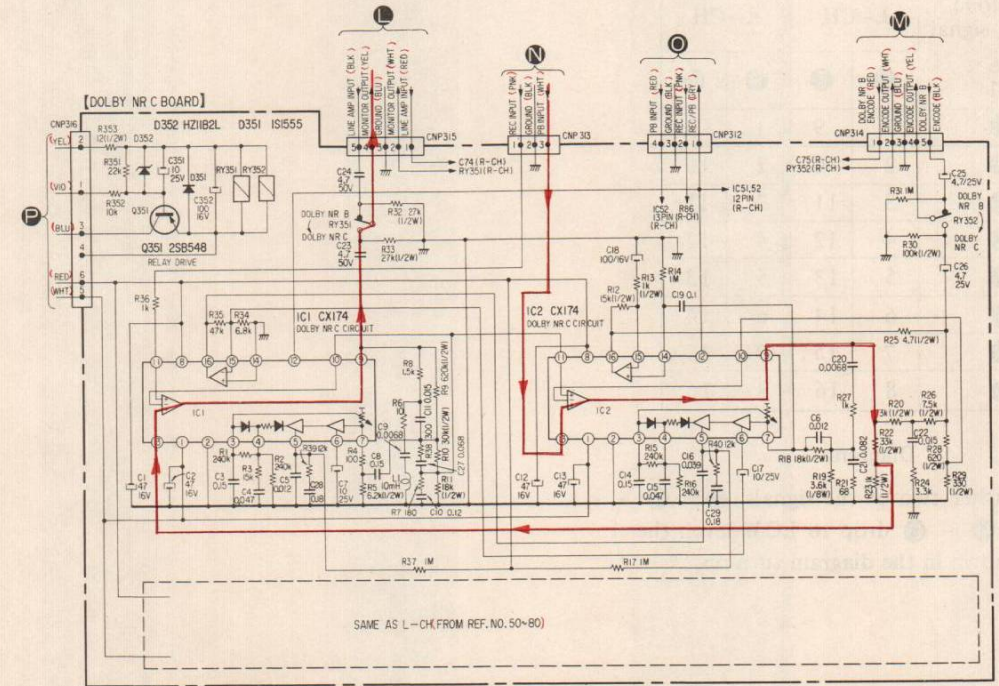


Fig. 5 (L-CH)

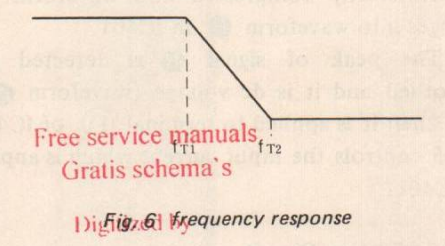
PLAYBACK IN DOLBY NR C-TYPE (Refer to Fig. 7)

The output signal of the playback EQ amp first is applied to terminal 13 of IC2 and IC52 in the low-level stage. This is the opposite of recording. Then the signal passes through the variable filter and is decoded 10 dB. Then, the signal is applied to terminal 13 of IC1 and IC51 in the high-level stage and is decoded 10 dB again. Thus it is finally decoded 20 dB and is fed to the LINE OUT.



b) Anti-saturation network (Refer to Fig. 6)

The anti-saturation network reduces high-level high-frequency signals when input signals are high to correct the tendency of the tape to saturate in high-level. The cut-off frequency level is 1.4 kHz (ft1) and 3 kHz (ft2).



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Frequency response transformed by the anti-saturation network and spectral skewing during recording are restored to the original input level in playback by means of a circuit with opposite characteristics. The NF circuit provides these functions.

Control Circuit

The control circuit is composed of the overshoot suppression amp, the sensing amp and the variable resistance control circuit.

The output of the variable filter is amplified by the overshoot suppression amp and the sensing amp, then rectified by the variable resistance control circuit and changes the value of variable resistance.

Therefore, during recording, it shows the encoding characteristics in Fig. 1. During playback, the opposite characteristics of the encode are shown, causing the control signal to be fed back to terminal (10) of IC1, IC51, IC2, and IC52.

1) High-Level Stage (Refer to Fig. 8)

The control circuit is shown in Fig. 8. The values of C3 and C4 are half of that of Dolby B-type. Also, both attack time and recovery time take half that of Dolby B-type.

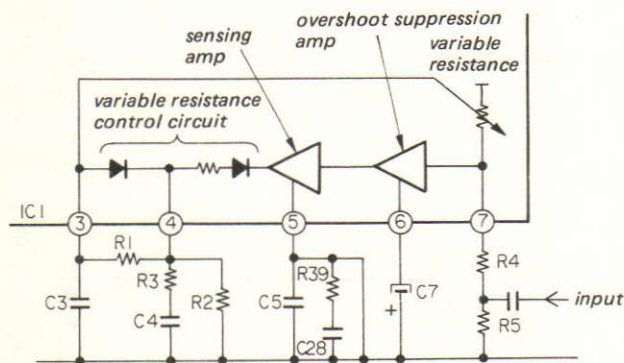


Fig. 8 (L-CH)

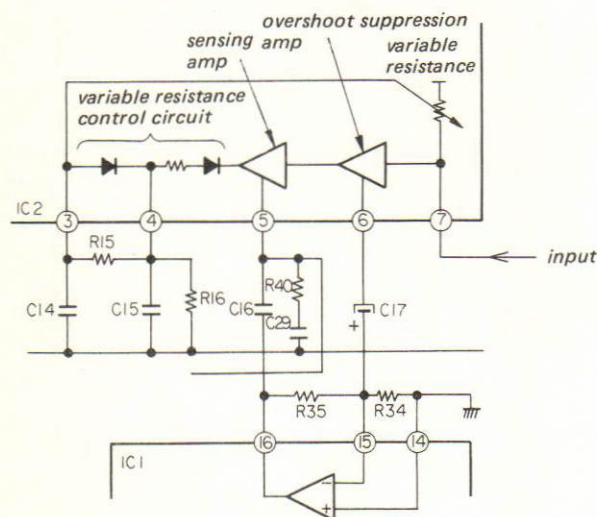


Fig. 9 (L-CH)

2) Low-Level Stage (Refer to Fig. 9)

The gain of the control circuit in the low-level stage must be 12 dB more than that in the high-level stage. Because the gain is not enough with just the amp in IC2 and IC52, the operational amp from IC1 and IC51 is used to compensate. Also, the sub signal circuit is formed by the amp which comes from terminals (14) ~ (16) of IC2 and IC52.

HOW TO CHECK THE DOLBY NR C-TYPE

Check the encoded signal level in the Dolby NR C board by using the AF OSC and VTVM as follows.

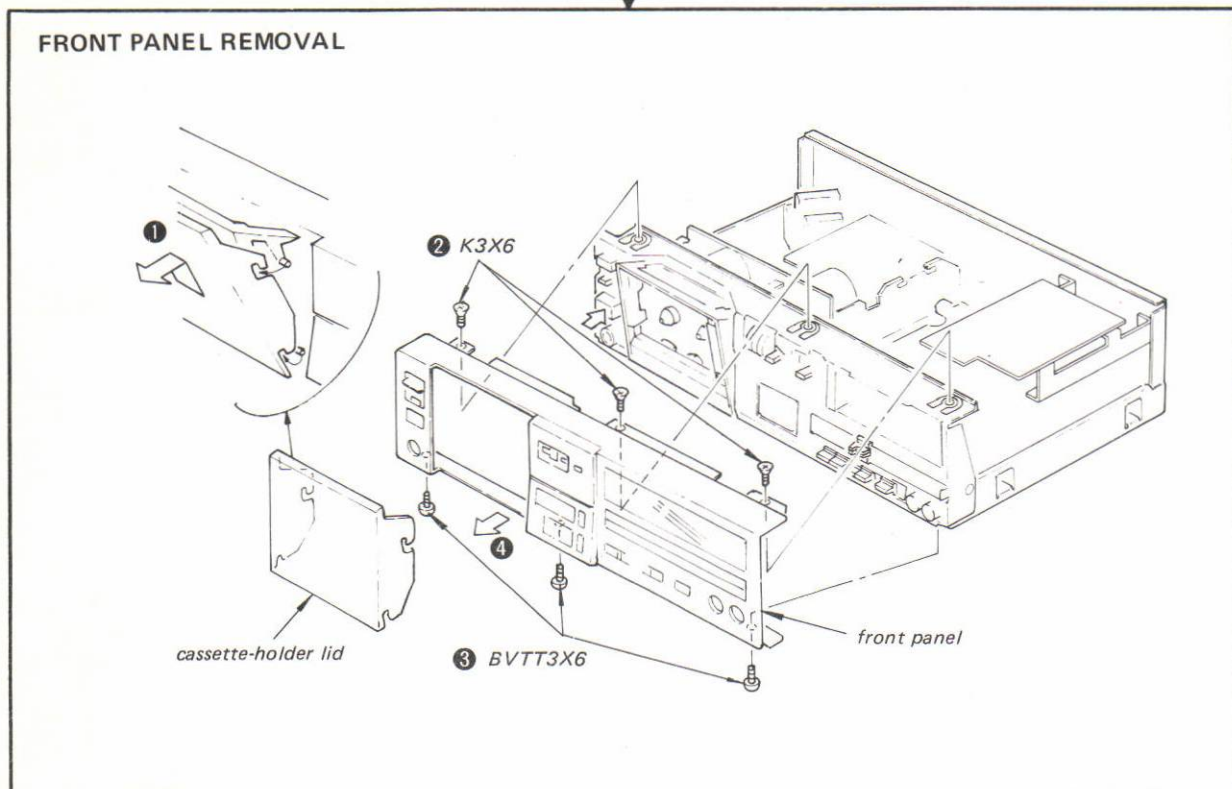
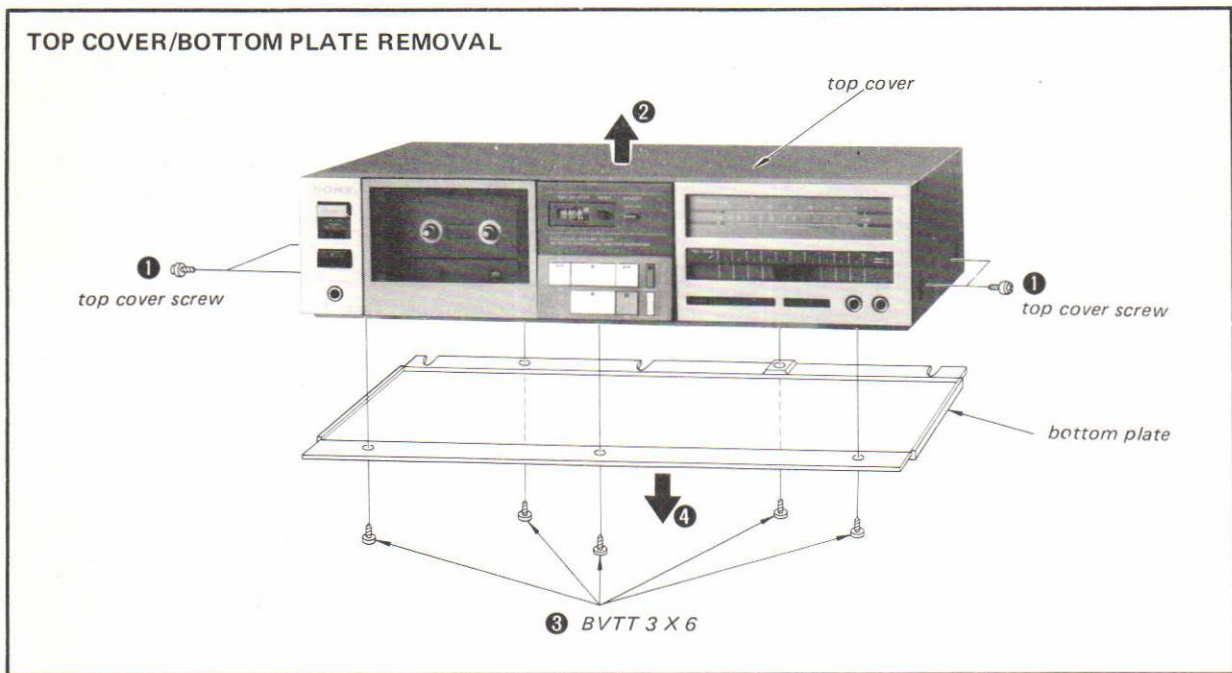
1. Turn on both the Dolby NR switch and the C-TYPE switch.
2. Set the unit for record.
3. Apply -10 dB (0.25V) at 400 Hz to the LINE IN.
4. Adjust the REC LEVEL control so that the level at terminal (9) (output) of IC1 and IC51 is 0.75 dB (0.845V at the Dolby level). Make sure that the output of the encoder (terminal (4) of CNP314) is -23.8 dB (50 mV).
5. Change the LINE IN level to -40 dB (7.7 mV) at 500 Hz and also make sure that terminal 4 of of CNP 314 is about -43.8 dB (5 mV).
6. Change the LINE IN level to -50 dB (2.5 mV) at 5 kHz and also make sure that the level at terminal (4) of CNP314 is -53.8 dB (1.58 mV).
7. Change the LINE IN level to -10 dB (0.25V) at 10 kHz and also make sure that the level at terminal (4) of CNP314 is -25.8 dB (40 mV) ± 3 dB ($+16$ mV, -11 mV).
8. Change the LINE IN level to -10 dB (0.25 V) at 19 kHz and also make sure that the level at terminal (4) of CNP314 is -38 dB (9.8 mV).
9. If any trouble occurs during the above procedure, check the following parts: IC, resistor, capacitor and coil.

In the record mode, input signals first pass through IC1 (IC51), then are fed to IC2 (IC52).

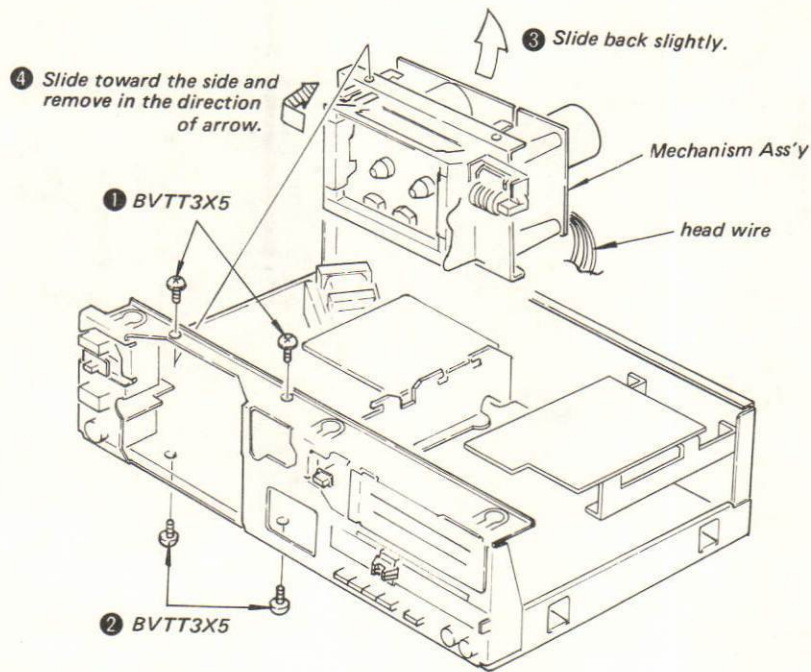
In the playback mode, the signal path is reversed, so the check of the Dolby NR C circuit can be performed in either the record mode or the playback mode.

SECTION 2 DISASSEMBLY

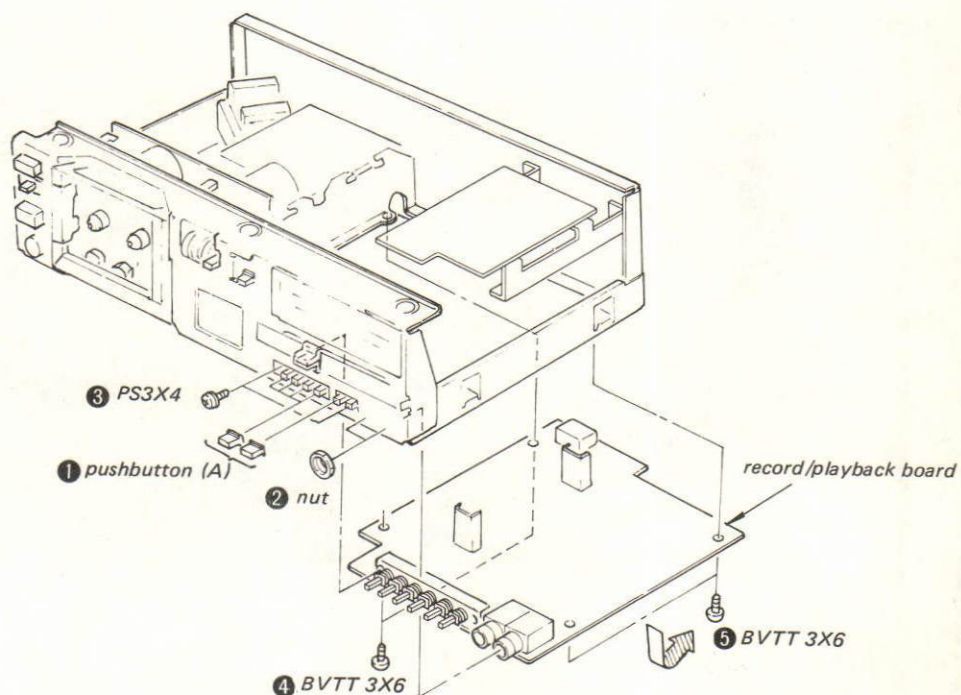
- Follow the disassembly procedure in the numerical order given.



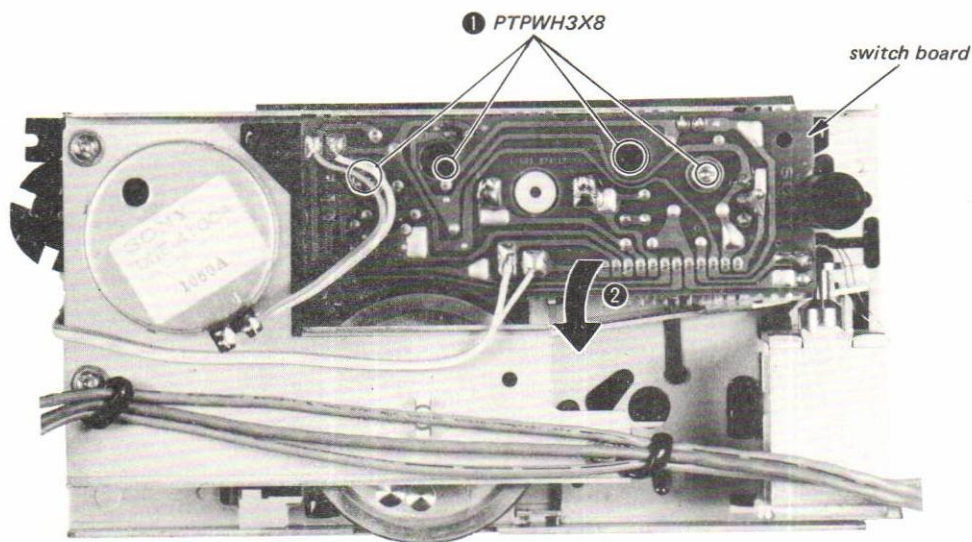
MECHANISM BLOCK REMOVAL



RECORD/PLAYBACK BOARD REMOVAL

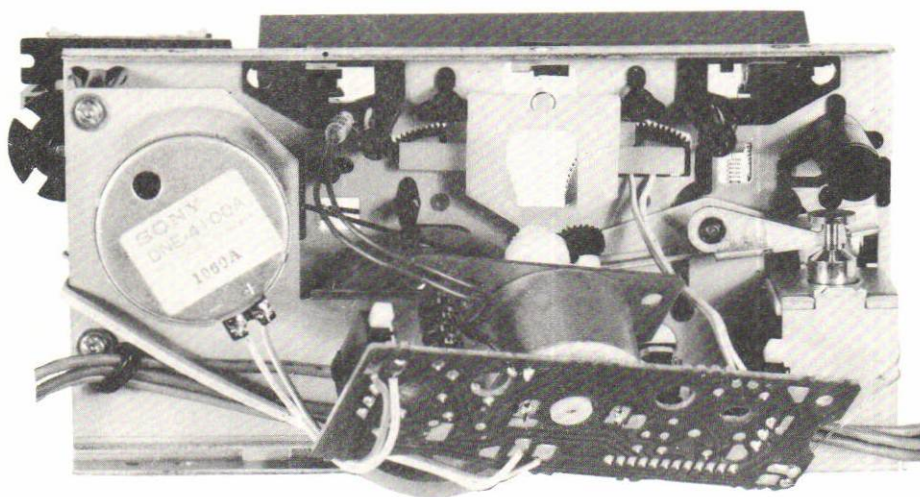


SWITCH BOARD REMOVAL



INSIDE OF MECHANISM BLOCK

rear view



Refer to mechanical adjustments for front view.

SECTION 3

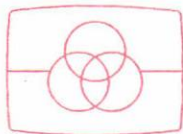
ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENTS

PRECAUTION

- Clean the following parts with a denatured-alcohol-moistened swab:

record/playback head	pinch roller
erase head	rubber belts
capstan	idlers
- Demagnetize the record/playback head with a head demagnetizer. (Do not bring the head demagnetizer close to the erase head.)
- Do not use a magnetized screwdriver for the adjustments.
- After the adjustments, apply suitable locking compound to the parts adjusted.
- The adjustments should be performed with the rated power supply voltage unless otherwise noted.



Free service manuals
Gratis schema's

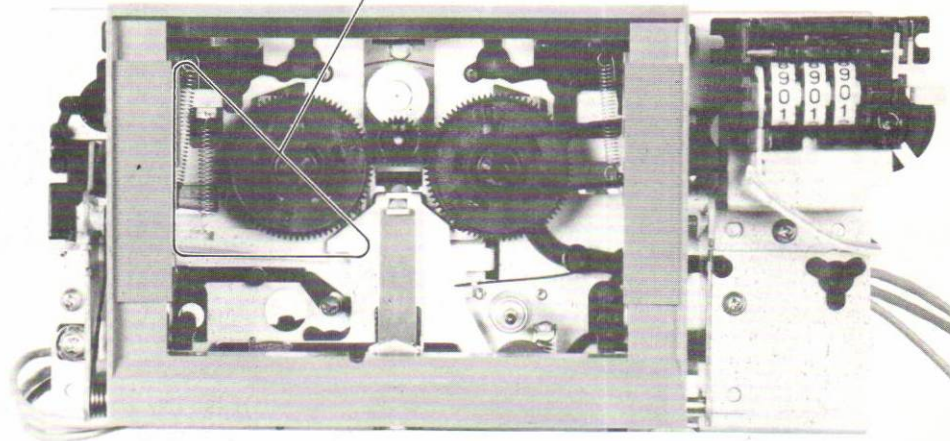
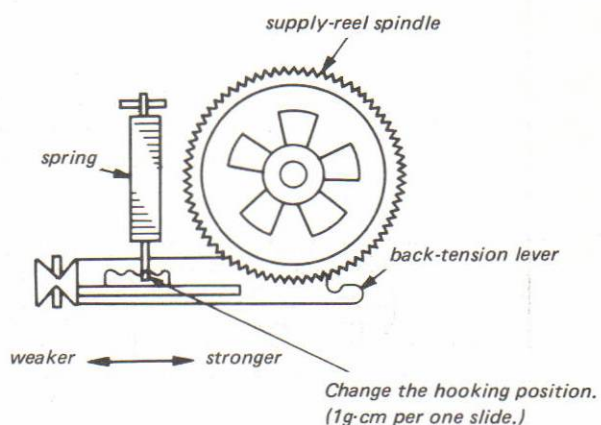
Digitized by

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Torque Measurement and Back Tension Torque Adjustment

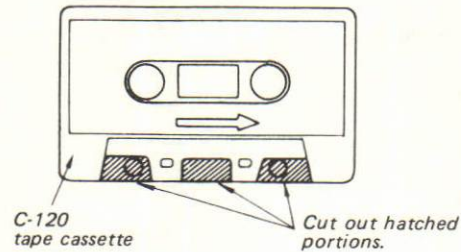
Torque	Torque meter	Meter reading
Forward	CQ-102C	35–55 g·cm (0.48–0.76 oz·inch)
Back tension	CQ-102C	2.5–4.5 g·cm (0.04–0.06 oz·inch)

- If the specified back-tension torque is not obtained, change the hooking position.

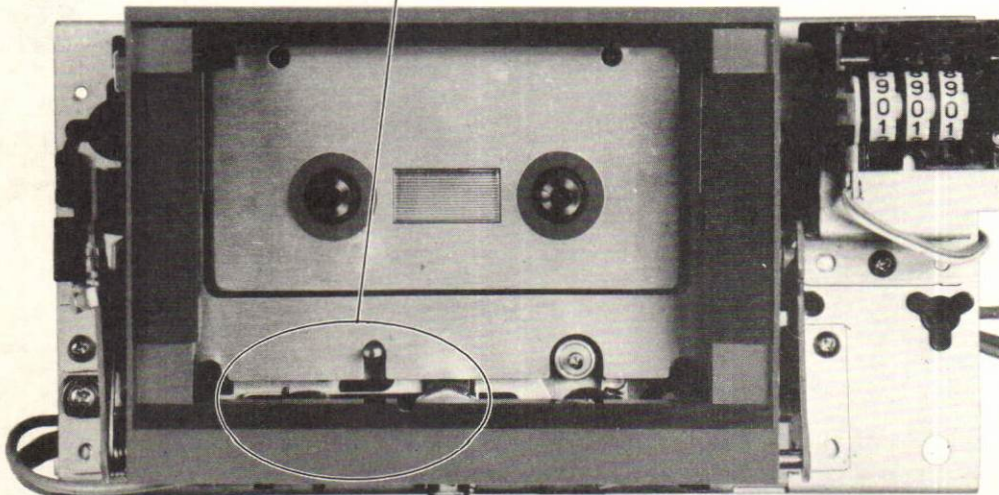
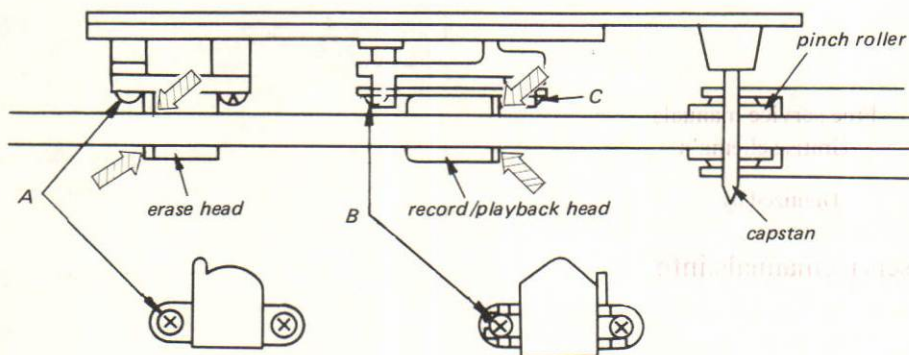


Head Height Adjustment

1. Prepare an adjustment cassette as shown below.



2. In playback mode and viewing from the front, adjust the head heights by using the adjustment screw A, B, C, to eliminate tape curl and tape twist at portions shown by arrow.



3-2. ELECTRICAL ADJUSTMENTS

Note: The adjustment should be performed in the order given in this service manual. The adjustments should be performed for both L-CH and R-CH.

- Set the TAPE switches according to the tape as follows.

Tape	TAPE switch
CS-10	TYPE I
CS-20	TYPE II
CS-30	TYPE III
CS-40	TYPE IV

- Switches and controls should be set as follows unless otherwise specified.

DOLBY NR switch : OFF
 TAPE switch : TYPE I
 TIMER STANDBY switch : OFF

- Standard Record :

Deliver the standard input signal level to the input jack and set the REC LEVEL control to obtain the standard output signal level.

Standard Input Level

	MIC	LINE IN
source impedance	300Ω	10kΩ
input level	0.77mV (-60dB)	0.25V (-10dB)

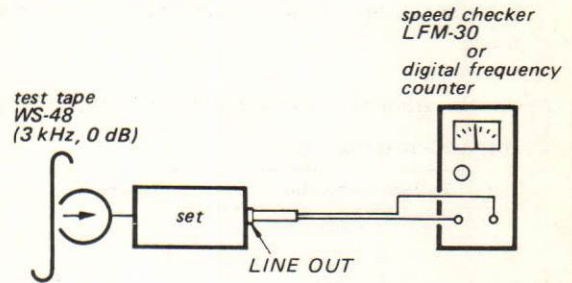
Standard Output Level

	HEAD-PHONES	LINE OUT
load impedance	8Ω	47kΩ
output level	31mV (-28dB)	0.435V (-5dB)

Capstan Motor Speed Adjustment

Procedure:

Mode : playback



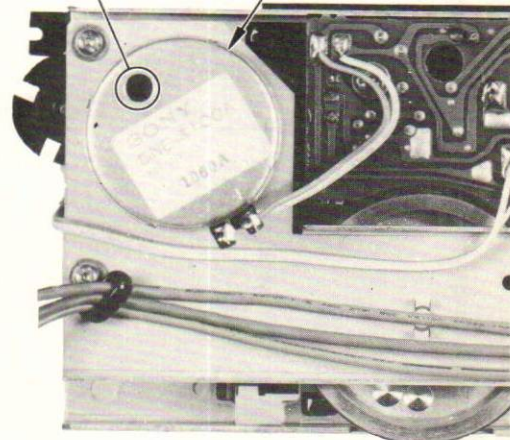
Specification:

Speed checker	Digital frequency counter
-0.17 ~ +0.17%	2,995 ~ 3,005 Hz

Frequency difference between the beginning and the end of the tape should be within 0.34% (10Hz).

Adjustment Location:

(Adjust the speed by using screwdriver. When turning the screw clockwise, speed is faster.) capstan motor



Reel Motor Torque Adjustment

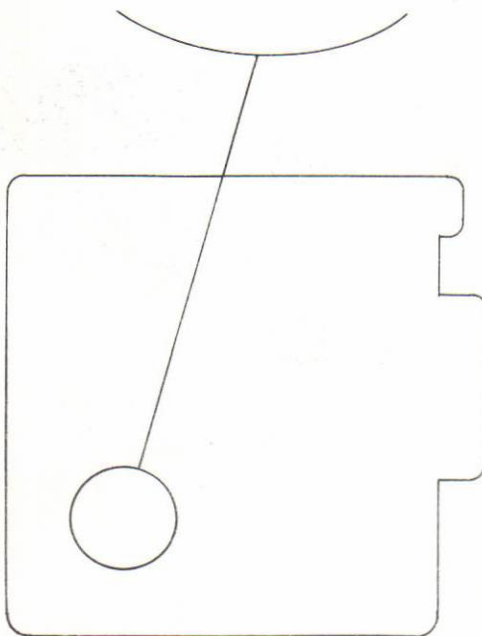
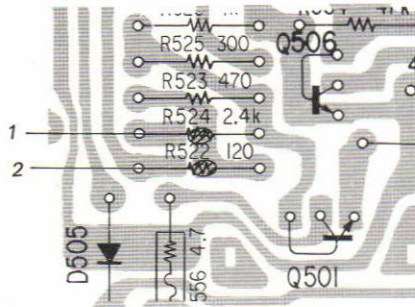
Procedure:

Install the fast-forward and rewind torque meter (CQ-201B) and bridge the patterns to obtain the specified torque value in fast-forward or rewind mode.

Specification: 80~140 g·cm (1.11~1.94 oz. inch)

Adjustment Location:

Pattern connection	Torque
1 · 2 open	low
2 bridge	↑
1 bridge	↓
1 · 2 bridge	high



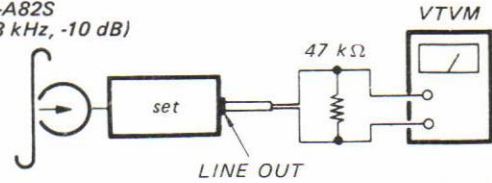
System Control board
(Conductor Side)

Record/playback Head Azimuth Adjustment

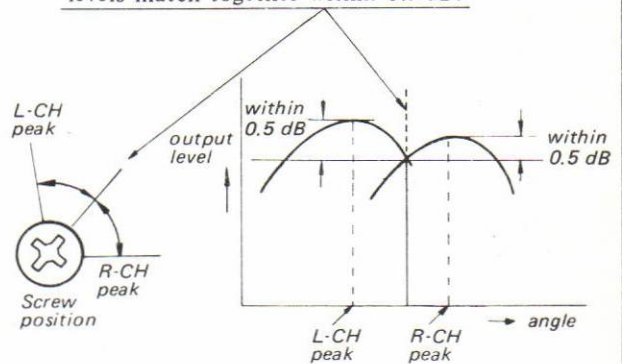
Procedure:

1. Mode: playback

test tape
P-4-A82S
(6.3 kHz, -10 dB)

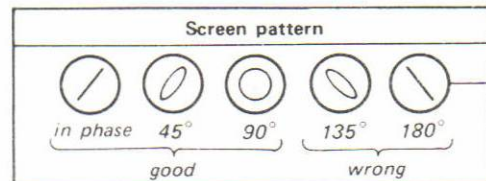
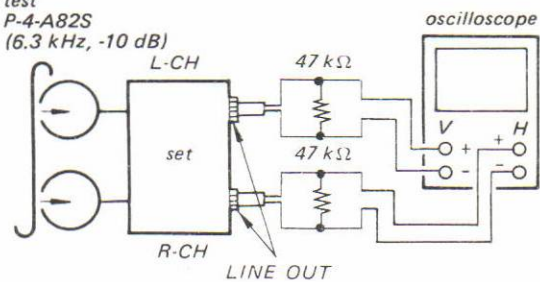


2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 0.5 dB.

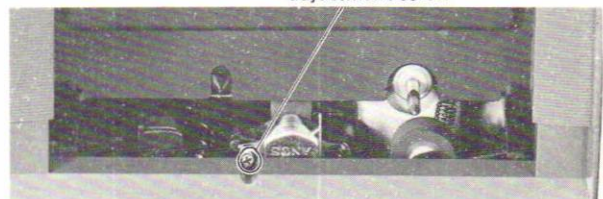


3. Phase Check
Mode: playback

test
P-4-A82S
(6.3 kHz, -10 dB)



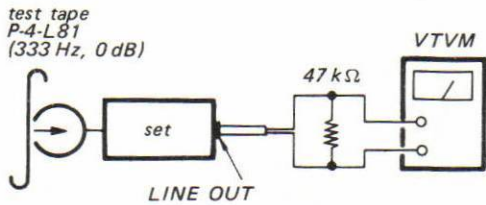
Adjustment Location: *adjustment screw*



Playback Level Adjustment

Procedure:

Mode : playback



Specification:

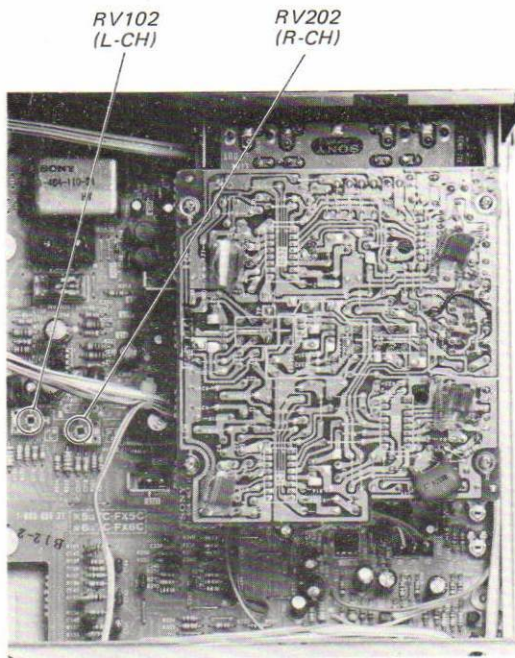
LINE OUT level : 0.52 ~ 0.59 V
(-3.5 ~ -2.5 dB)

Level difference between channels :
less than 0.5 dB

Check that the LINE OUT level does not change in playback mode while changing the mode from playback to stop several times.

Adjustment Location:

- record/playback board -

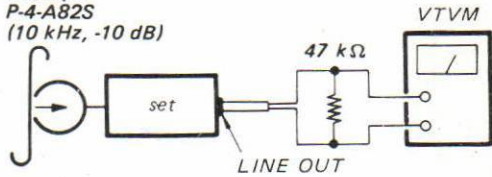


Playback Equalizer Adjustment

Procedure:

Mode: playback

test tape
P-4-A82S
(10 kHz, -10 dB)



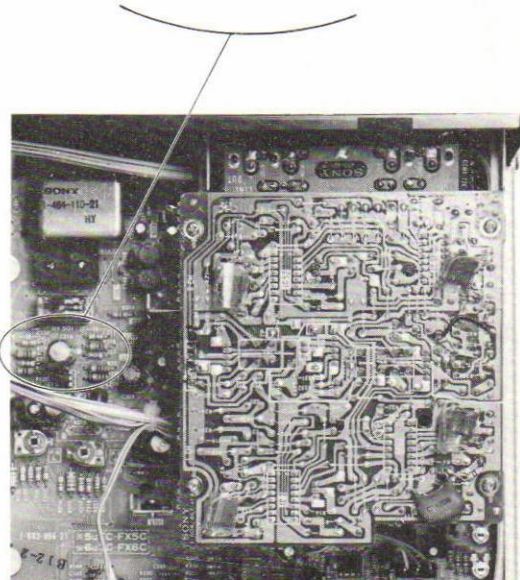
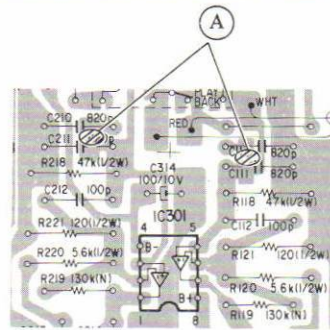
Specification:

LINE OUT level (TYPE I):
0.12 ~ 0.25 V (-16 ~ -10dB)
LINE OUT level (TYPE II, III, IV):
0.08 ~ 0.15 V (-20 ~ -14 dB)
Level difference between channels :
less than 3 dB

Adjustment Location:

- record/playback board -

Pattern connection	LINE OUT level
open	↑ up
A	↓ down



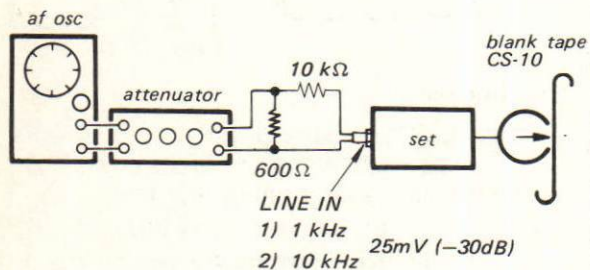
Record Bias Adjustment

Setting:

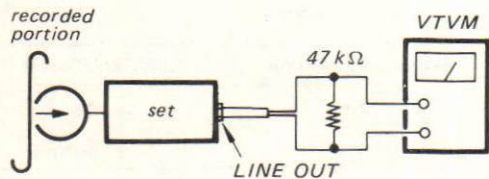
REC LEVEL control: standard record
(See page 21)

Procedure:

1. Mode: record



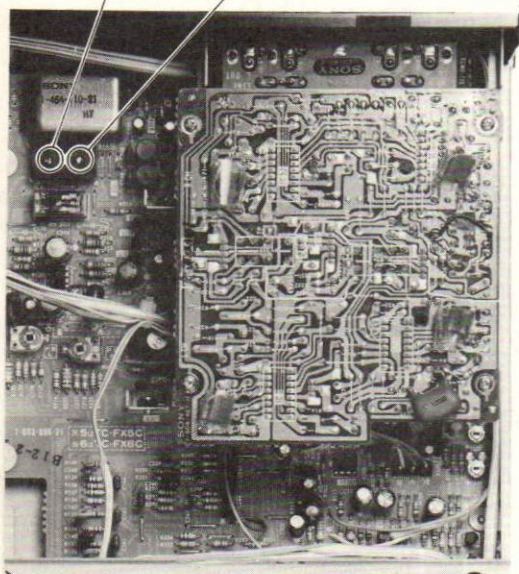
2. Mode: playback



Adjust CT101 (L-CH) and CT201 (R-CH) so that the LINE OUT level of 10 kHz signal is 0 dB relative to that of 1 kHz.

Adjustment Location:

— record/playback board —
CT101 (L-CH) CT201 (R-CH)



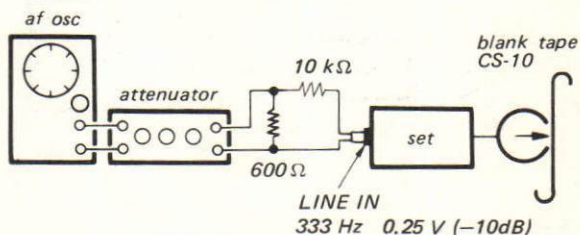
Record Level Adjustment

Setting:

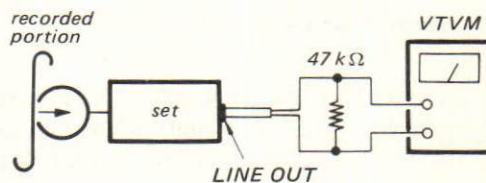
REC LEVEL control: standard record
(See page 21)

Procedure:

1. Mode: record



2. Mode: playback

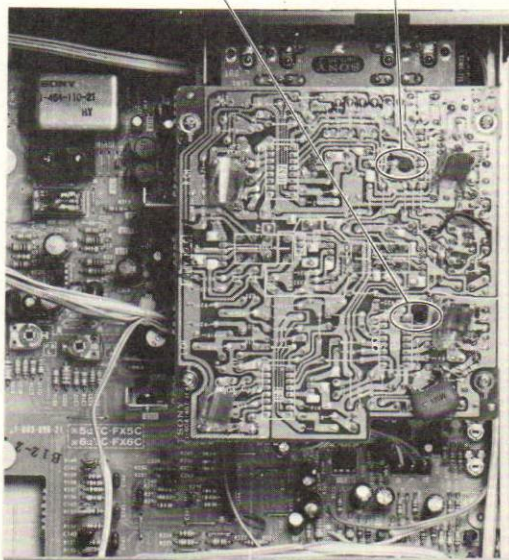


Specification:

LINE OUT level : 0.41 ~ 0.46 V
(-5.5 ~ -4.5 dB)

Adjustment Location:

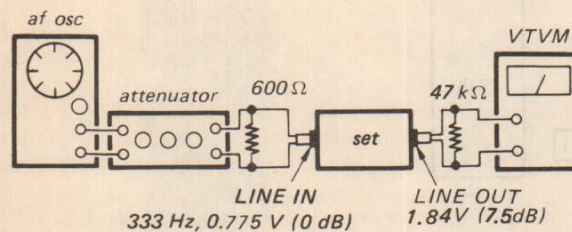
— record/playback board —
RV103 (L-CH) RV203 (R-CH)



Level Meter Calibration

Procedure:

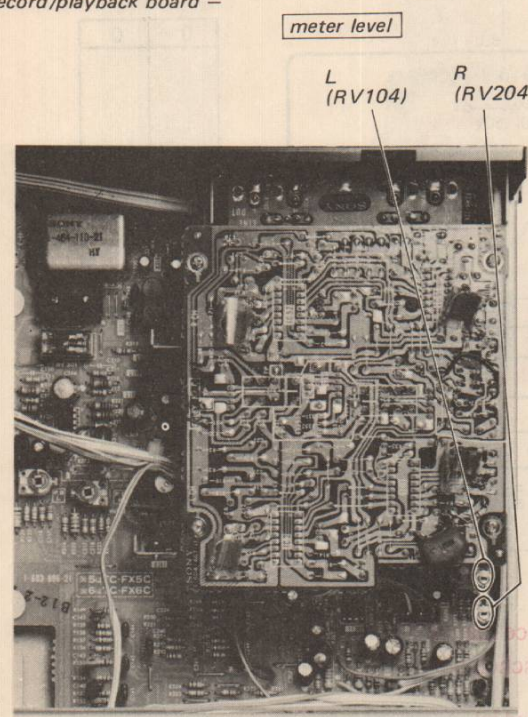
1. Mode : record



1. Set the REC LEVEL control so that the LINE OUT level is +7.5 dB.
2. Adjust RV104 (L-CH) and RV204 (R-CH) so that the LEDs including 8 dB (right-most element) light up.
3. Set the REC LEVEL control so that the LINE OUT level is 5 dB. Make sure that LED meter indicates -4 dB (0 VU) in this time.
Note : Turn the REC LEVEL control clockwise slowly.
(Be careful to peakhold indication)

Adjustment Location:

- record/playback board -



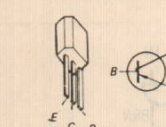
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Voltages and Waveforms at the Terminals of IC501

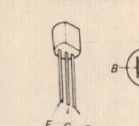
Terminal No.	Waveform or Voltage	Terminal No.	Waveform or Voltage	Terminal No.	Waveform or Voltage
①	Record Mode 5.6V 0V	⑩	6V 0.7V 0V Record Muting button is pushed	⑳	Forward Mode or Record Mode (Voltage becomes 6V even when REC button only is pushed - REC MONITOR) 6V 0V
②	Forward Mode 5.6V 0V	⑪	6V 0V Tape End 0.2 sec Tape stops at the end of the tape from Forward Mode. Voltage may fall to 0V by rotating angle of take-up reel spindle after shut-off mechanism operates. 2sec Auto Shut-off	㉑	5.6V 0V 31.25msec PAUSE button is pushed in Record Mode
③	Pause Mode 5.6V 0V	⑫	6V dc	㉒	5.6V 0V Forward Mode
④	6V 0V Stop button is pushed	⑬	1.3Vp-p 8msec	㉓	5.6V 0V Forward button is pushed
⑤	6V 0V Rewind button is pushed	⑭	0Vdc	㉔	5.6V 0V Fast Forward Mode
⑥	6V 0V Fast Forward button is pushed	⑮	6Vdc	㉕	5.6V 0V Fast Forward Mode
⑦	6V 1V 0V Forward button is pushed	⑯	6V 0V Power button is pushed in Timer reset Mode	㉖	5.6V 0V Fast Forward Mode
⑧	6V 1.4V 0V Record button is pushed	⑰	6V 0V 4sec 0.5sec Record Muting button is pushed in Record Mode	㉗	5.6V 0V Rewind Mode
⑨	6V 1.2V 0V Pause button is pushed	⑱	6V 0V Record button is pushed	㉘	6Vdc

Semiconductor Lead Layout

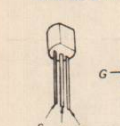
2SA844
2SA1027R



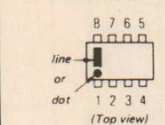
2SC1364



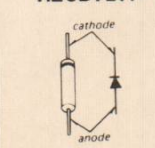
2SK30A



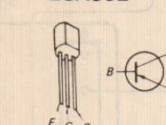
NJM2903D
NJM4562
NJM4562D



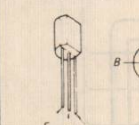
1S1555
1T40
10E2
HZ6B1L
HZ11B1L
HZ11B1LTP
HZ11B2L
HZ11C3L
HZ6B1LTP



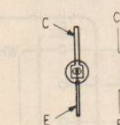
2SA952



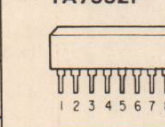
2SC2001



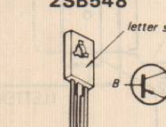
PH102



TA7332P



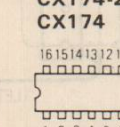
2SB548



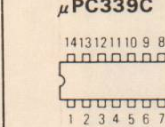
2SD414
2SD862



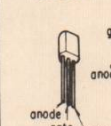
CX174-2
CX174



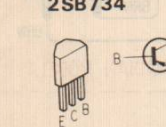
μPC339C



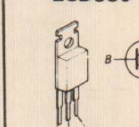
N13T1



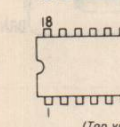
2SB734



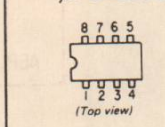
2SD880



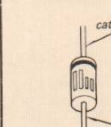
MSL9351



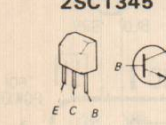
μPC4557C



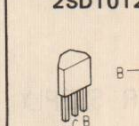
EQB01-15



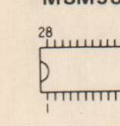
2SC458A
2SC1345



2SD1012



MSM5836

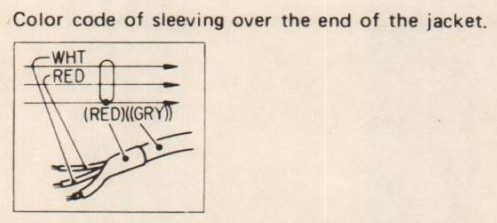
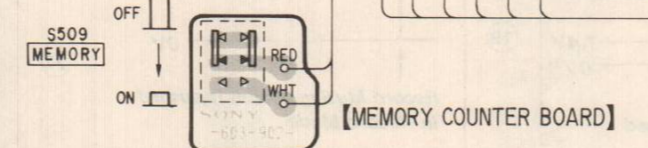
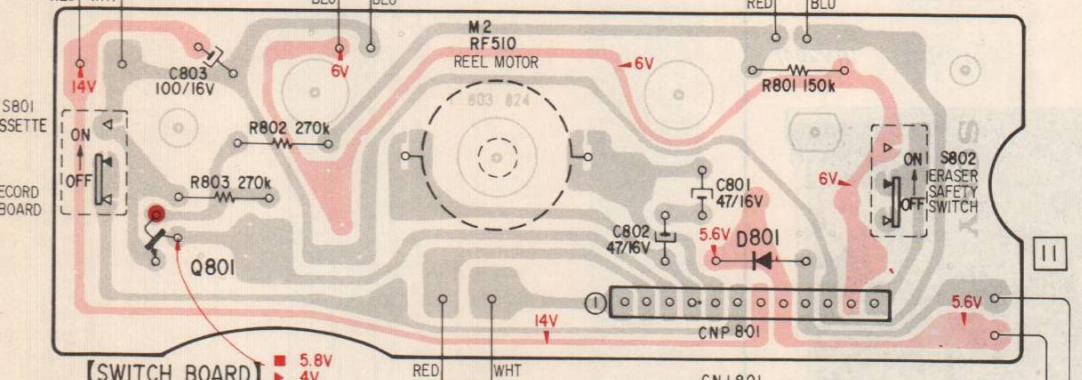
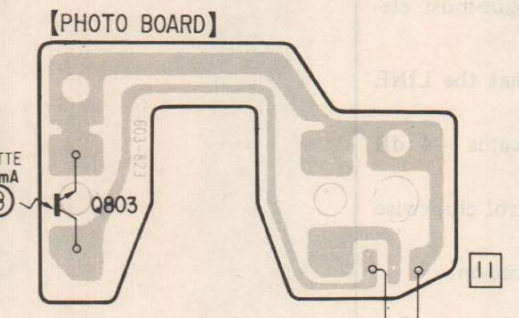
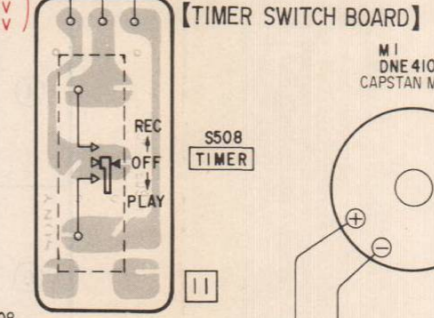
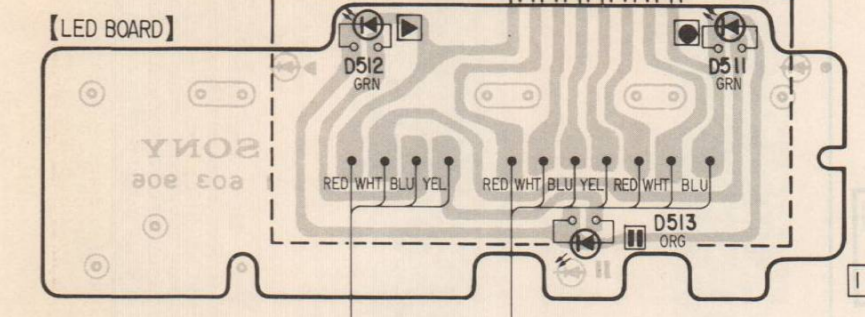
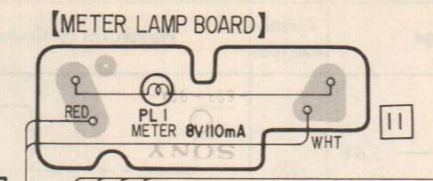
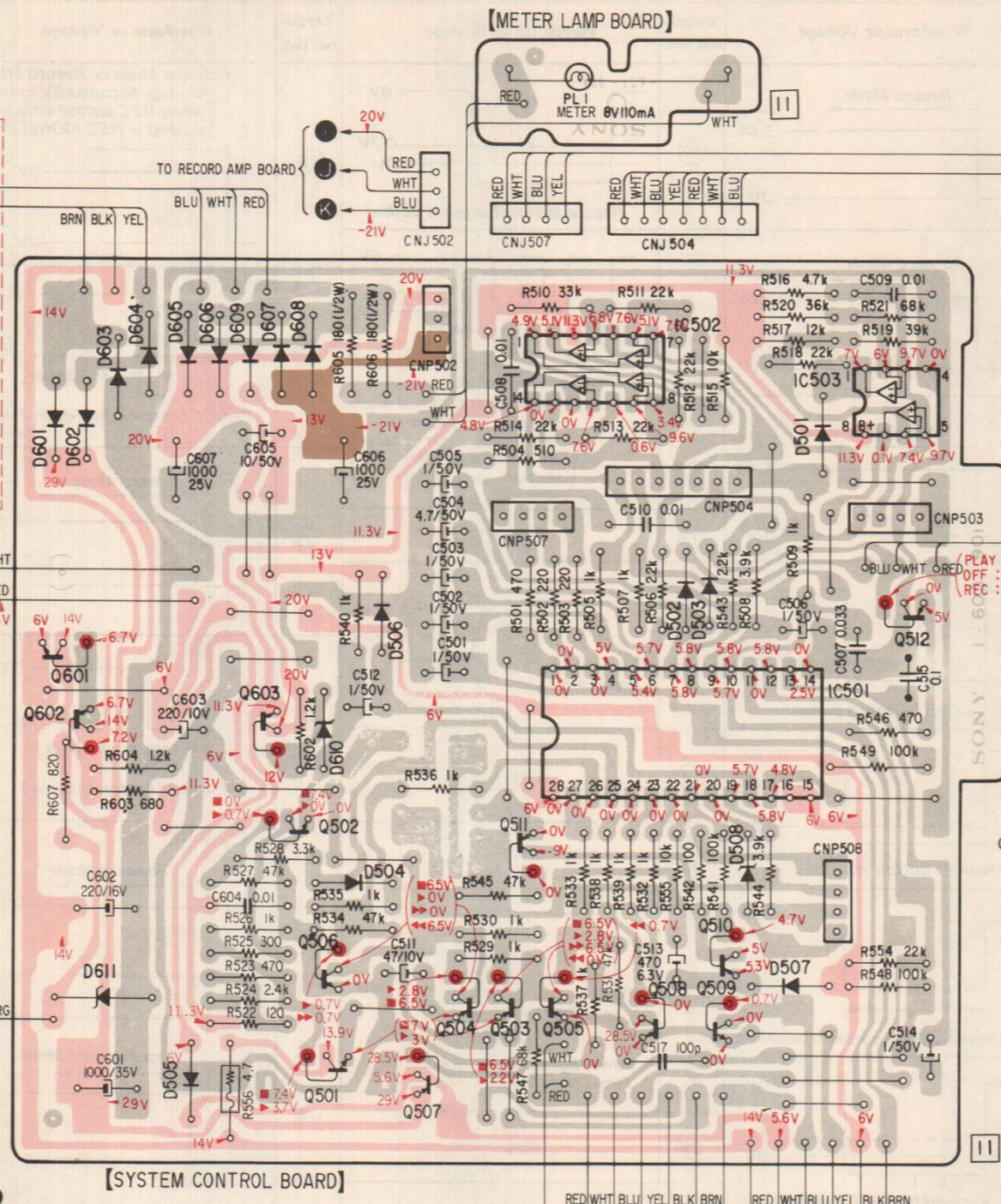
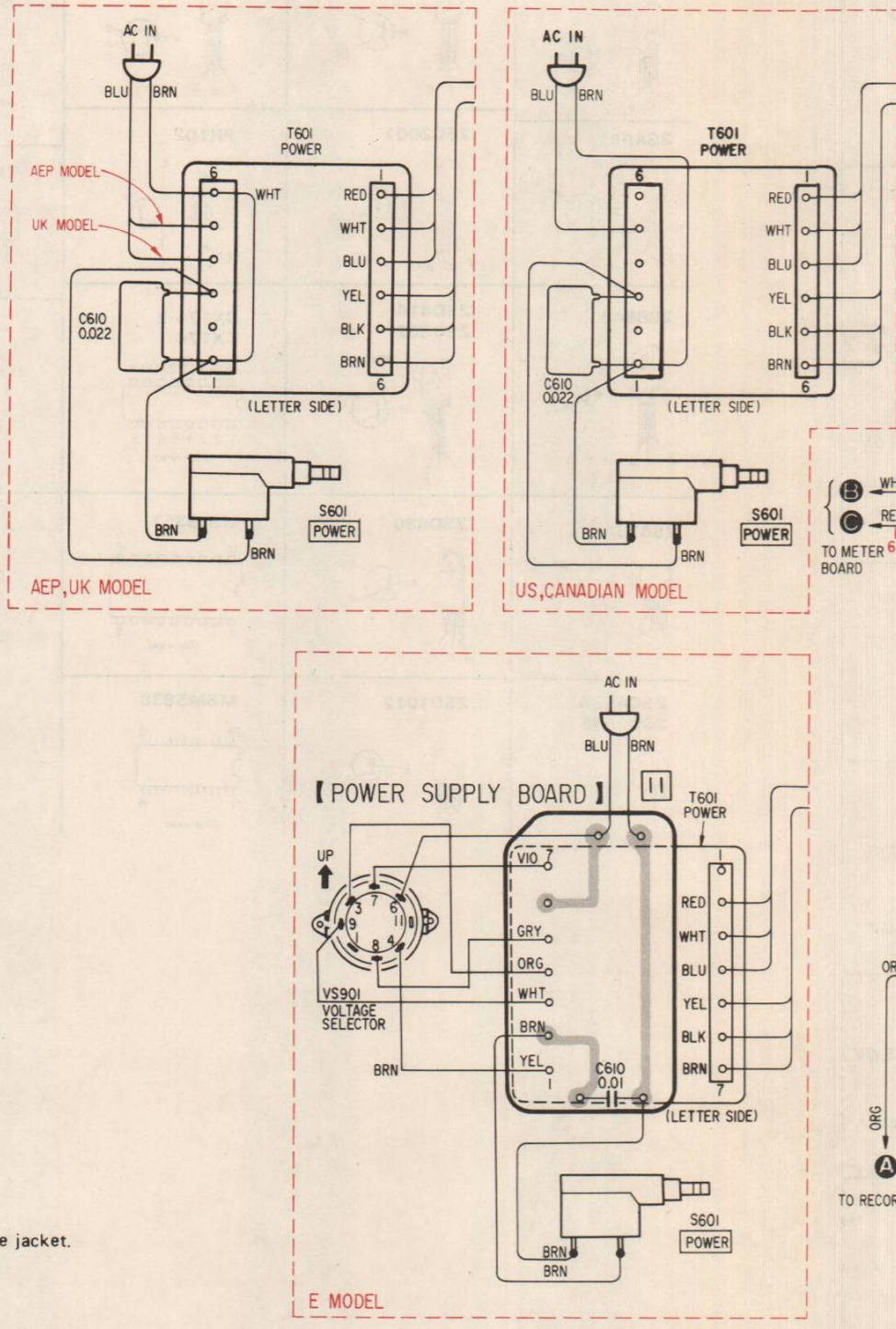


SECTION 4 DIAGRAMS

4-1. MOUNTING DIAGRAM - System Control Section - Conductor Side

Refer to page 26 for voltages and waveforms at the terminals of IC501.

1
2
3
4
5



- Parts extracted from the component side.
Parts extracted from the conductor side.
(F): fusible resistor.
B+ pattern.
B- pattern.

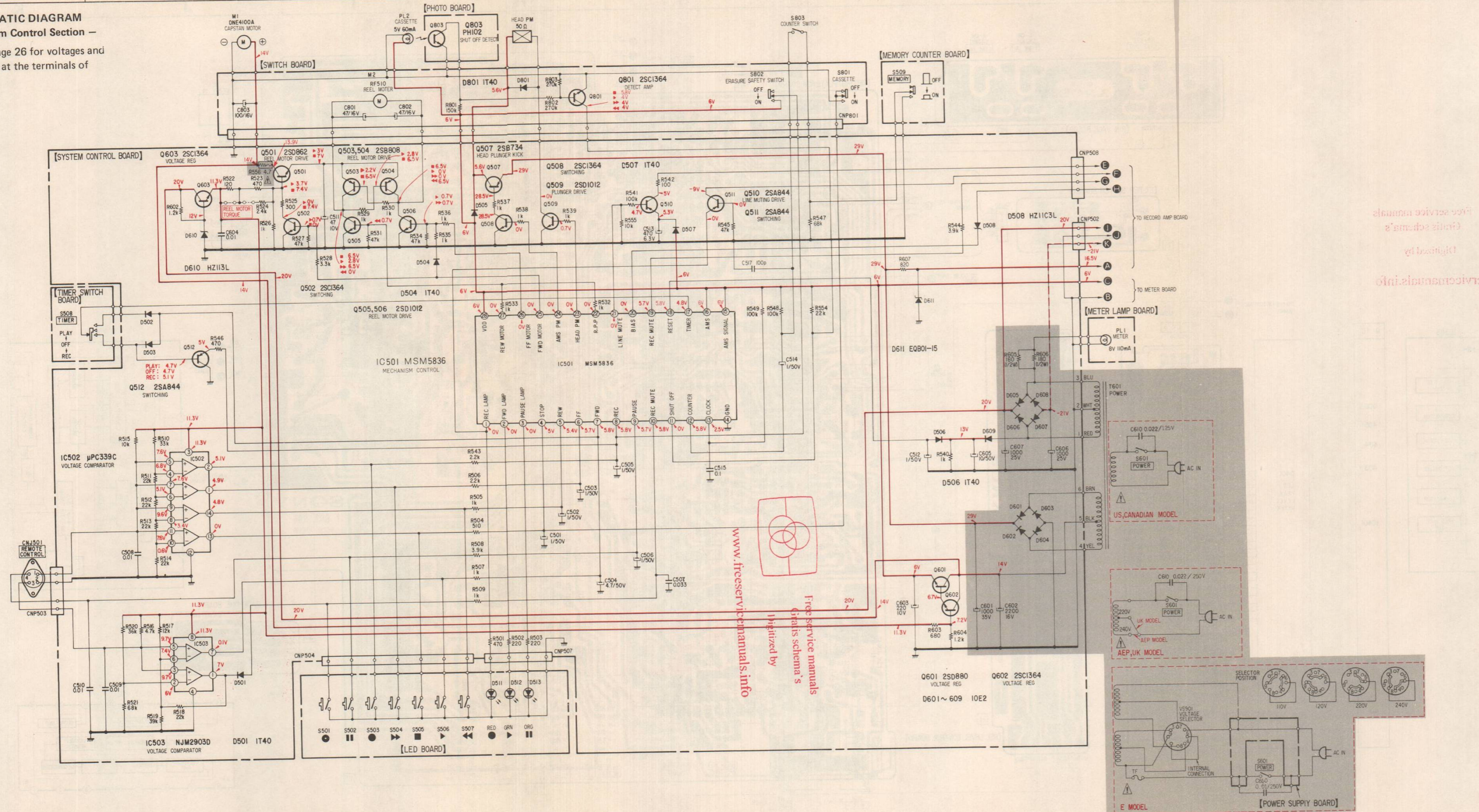
Table with 2 columns (D, Q) and 2 rows (601, 602) listing component numbers like 604, 605, 606, 609, 607, 608, 506, 502, 503, 507, 501, 513, 511, IC502, 510, IC503, 512, 505, 504, 503, 505, 508, 509.

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TC-FX5C TC-FX5C

4-2. SCHEMATIC DIAGRAM - System Control Section -

Refer to page 26 for voltages and waveforms at the terminals of IC501.



- Notes:**
- All capacitors are in μF unless otherwise noted. $\text{pF} : \mu\text{F}$ 50WV or less are not indicated except for electrolytics and tantalums.
 - All resistors are in ohms, $\frac{1}{4}\text{W}$ unless otherwise noted. $\text{k}\Omega : 1000\Omega$, $\text{M}\Omega : 1000\text{k}\Omega$
 - : nonflammable resistor.
 - : fusible resistor.
 - : adjustment for repair.
 - : B+ bus.
 - : B- bus.
 - Readings are taken under no-signal conditions with a VOM (20 $\text{k}\Omega/\text{V}$).
no mark : STOP
■ : STOP
▶ : FWD
◀ : REW
◀▶ : FF
● : REC
|| : PAUSE
 - Voltages are dc with respect to ground unless otherwise noted.

Switch

Ref. No.	Switch	Position
S501	REC MUTE	OFF
S502	PAUSE	OFF
S503	REC	OFF
S504	FF	OFF
S505	STOP	OFF
S506	FWD	OFF
S507	REW	OFF
S508	TIMER	OFF
S509	MEMORY	OFF
S601	POWER	OFF
S801	CASSETTE	OFF
S802	ERASURE SAFETY	OFF
S803	COUNTER	OFF

Note: The components identified by shading and mark are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par une trame et une marque sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

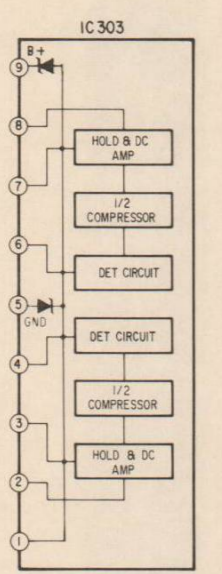
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4-3. MOUNTING DIAGRAM - Audio Amp Section - Conductor Side -

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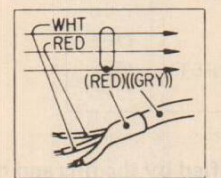
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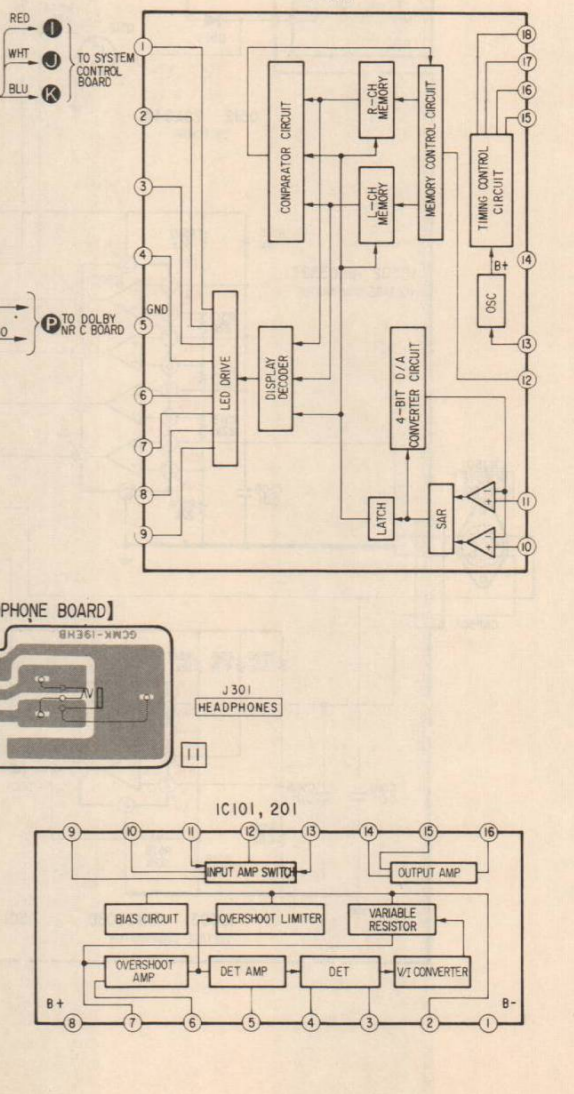
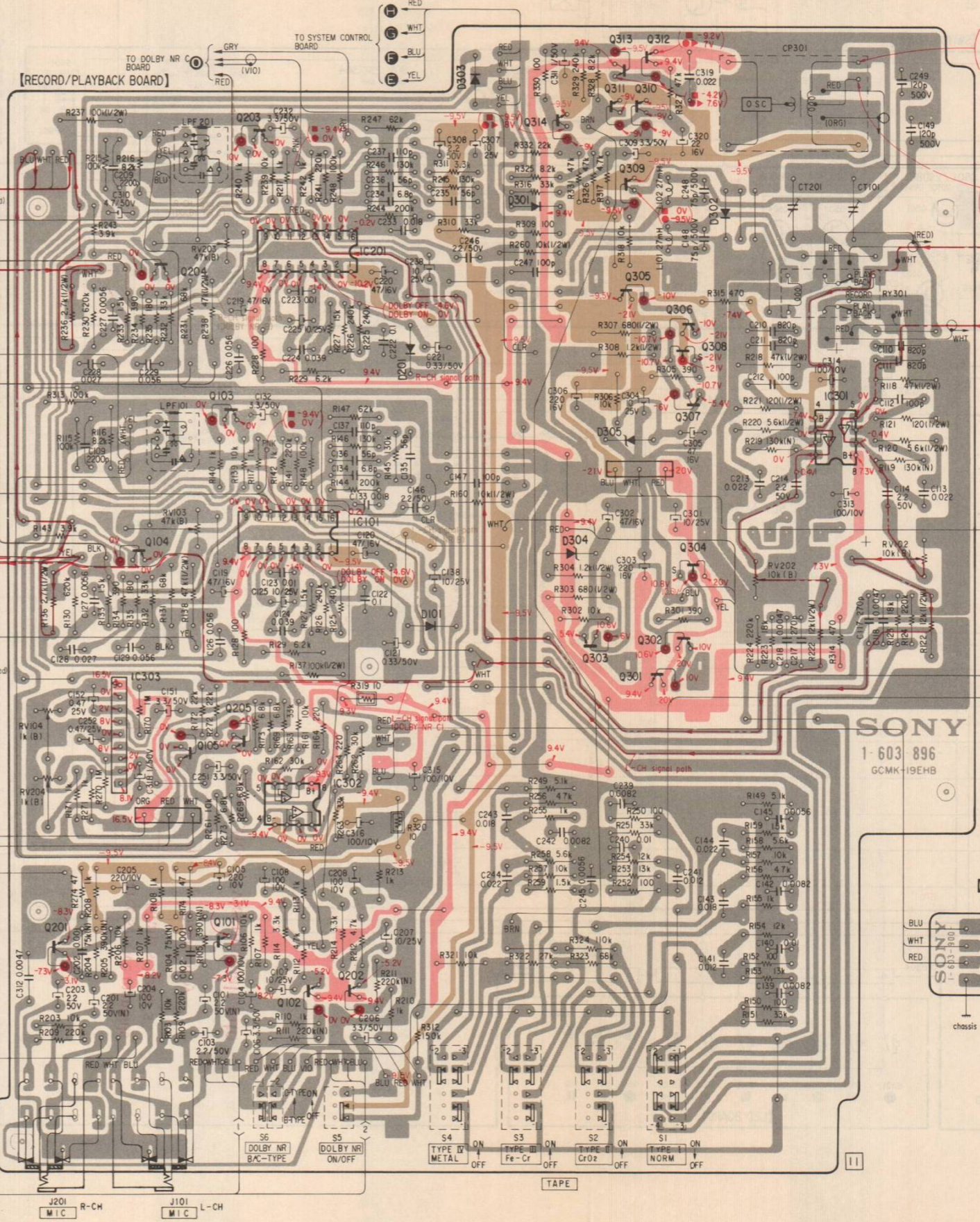
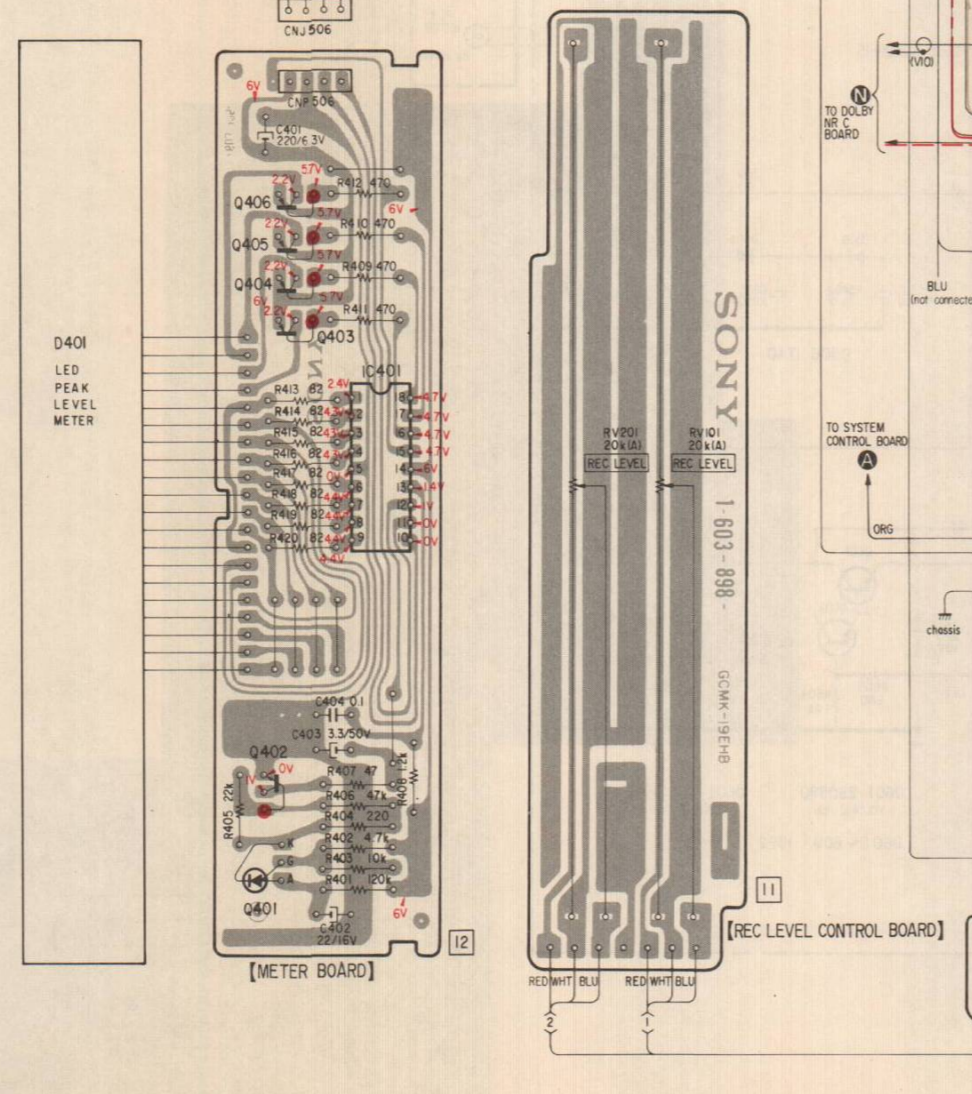
Q · IC

406
405
404
403
402
401

Color code of sleeving over the end of the jacket.

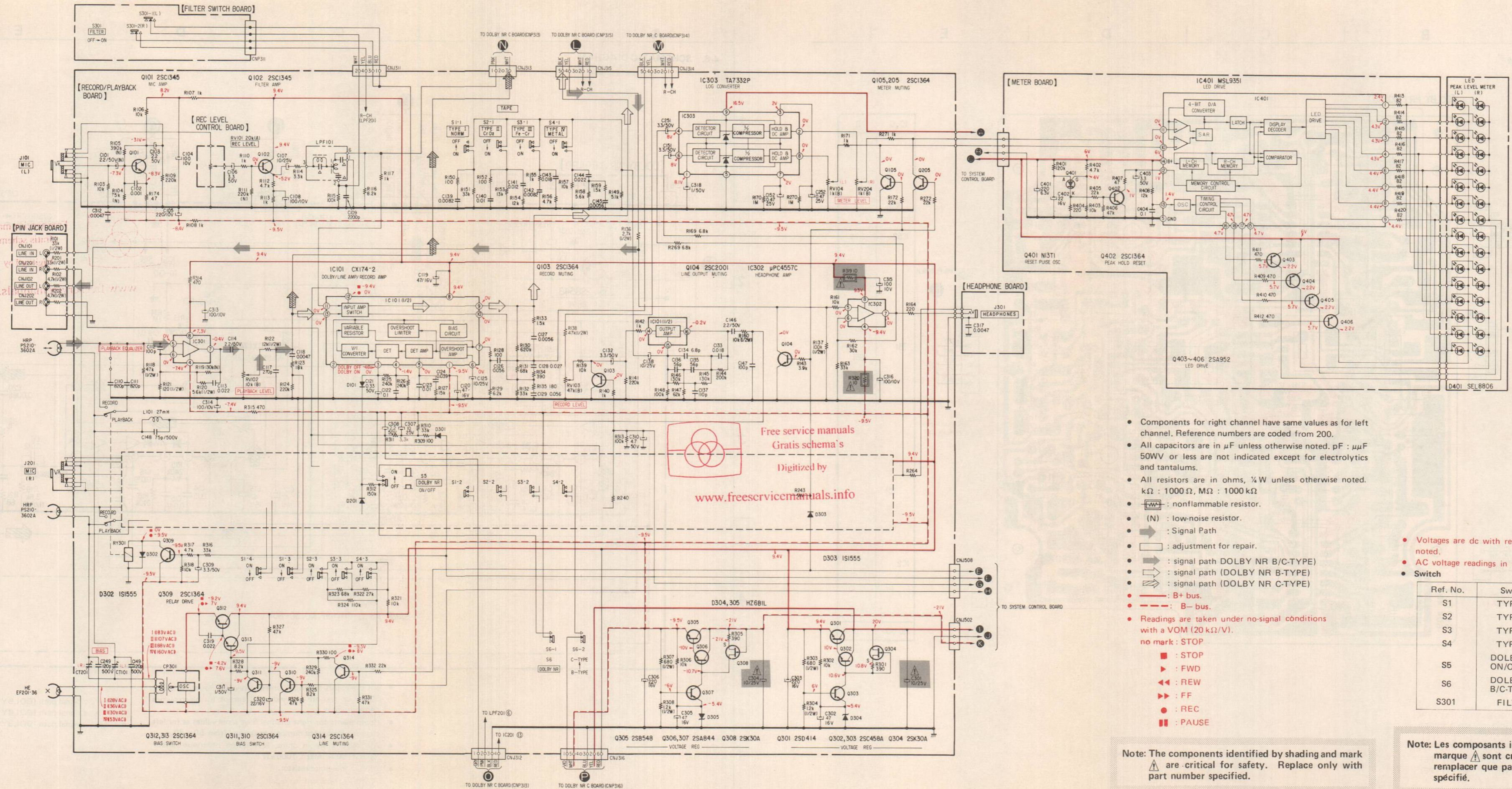


- : parts extracted from the component side.
- : parts extracted from the conductor side.
- : indicates side identified with part number.
- : B+ pattern
- : B- pattern
- : L-CH signal path (DOLBY NR B/C-TYPE)
- : L-CH signal path (DOLBY NR B-TYPE)
- : L-CH signal path (DOLBY NR C-TYPE)
- : R-CH signal path (DOLBY NR B/C-TYPE)
- : R-CH signal path (DOLBY NR B-TYPE)
- : R-CH signal path (DOLBY NR C-TYPE)



Q · IC	D
313 312	303
314 311 310	203
309	301 302
204 1C201	305
306	201
308	103
201	1C301
307	305
103	1C301
305	1C101
1C101	104
104	403 304
303 302	101
301	1C303
1C303	205
105	1C302
1C302	201 101
201 101	102 202

4-4. SCHEMATIC DIAGRAM — Audio Amp Section —



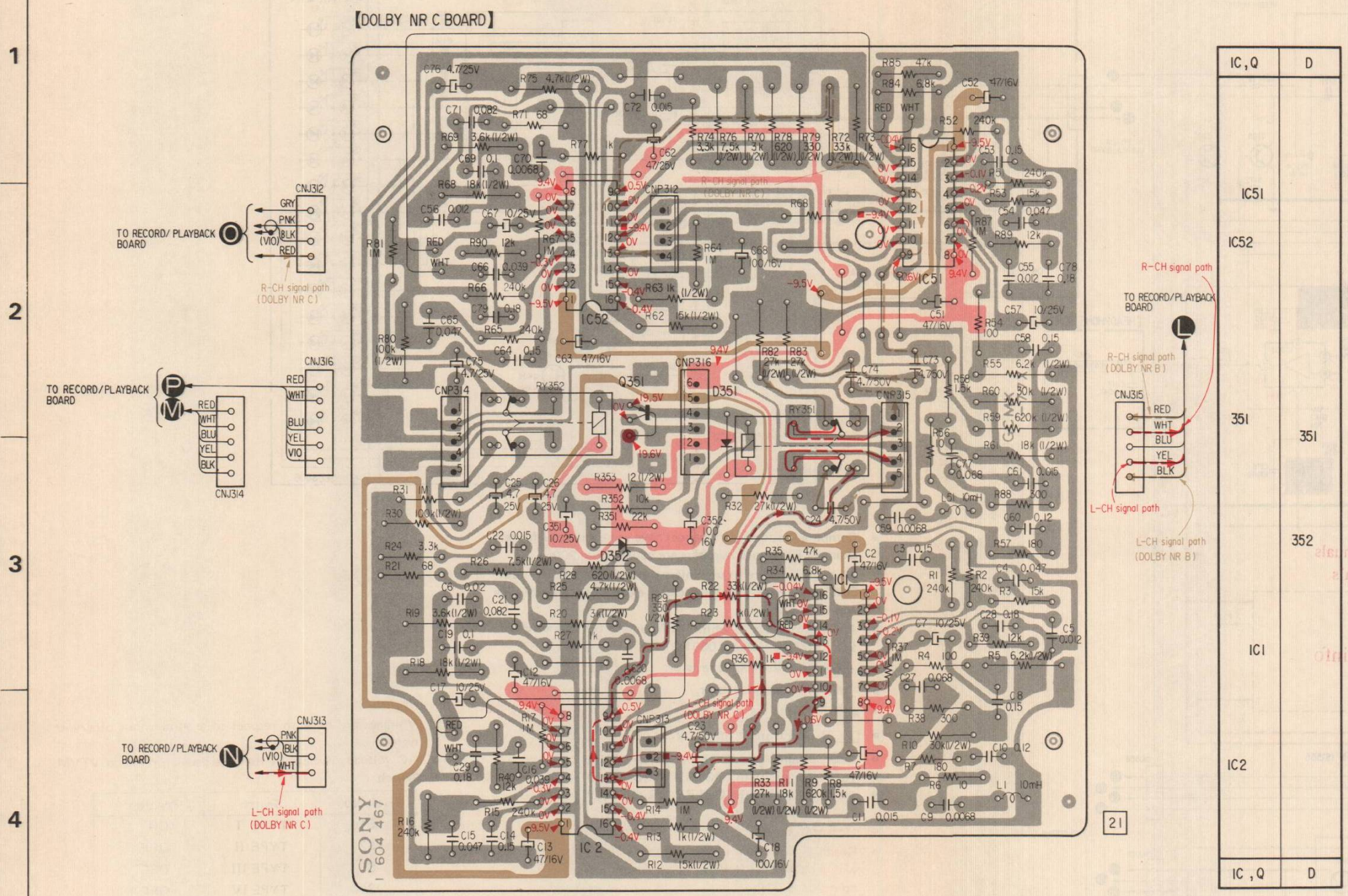
- Components for right channel have same values as for left channel. Reference numbers are coded from 200.
- All capacitors are in μF unless otherwise noted. pF : μmF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, $\frac{1}{4}\text{W}$ unless otherwise noted. $\text{k}\Omega$: 1000 Ω , $\text{M}\Omega$: 1000 $\text{k}\Omega$.
- : nonflammable resistor.
- (N) : low-noise resistor.
- : Signal Path
- : adjustment for repair.
- : signal path DOLBY NR B/C-TYPE)
- : signal path (DOLBY NR B-TYPE)
- : signal path (DOLBY NR C-TYPE)
- : B+ bus.
- : B- bus.
- Readings are taken under no-signal conditions with a VOM (20 $\text{k}\Omega/\text{V}$).
- no mark : STOP
- : STOP
- : FWD
- : REW
- : FF
- : REC
- : PAUSE
- Voltages are dc with respect to ground unless otherwise noted.
- AC voltage readings in the bias oscillator with a VTVM.
- Switch

Ref. No.	Switch	Position
S1	TYPE I	ON
S2	TYPE II	OFF
S3	TYPE III	OFF
S4	TYPE IV	OFF
S5	DOLBY NR ON/OFF	OFF
S6	DOLBY NR B/C-TYPE	B-TYPE
S301	FILTER	OFF

Note: The components identified by shading and mark are critical for safety. Replace only with part number specified.

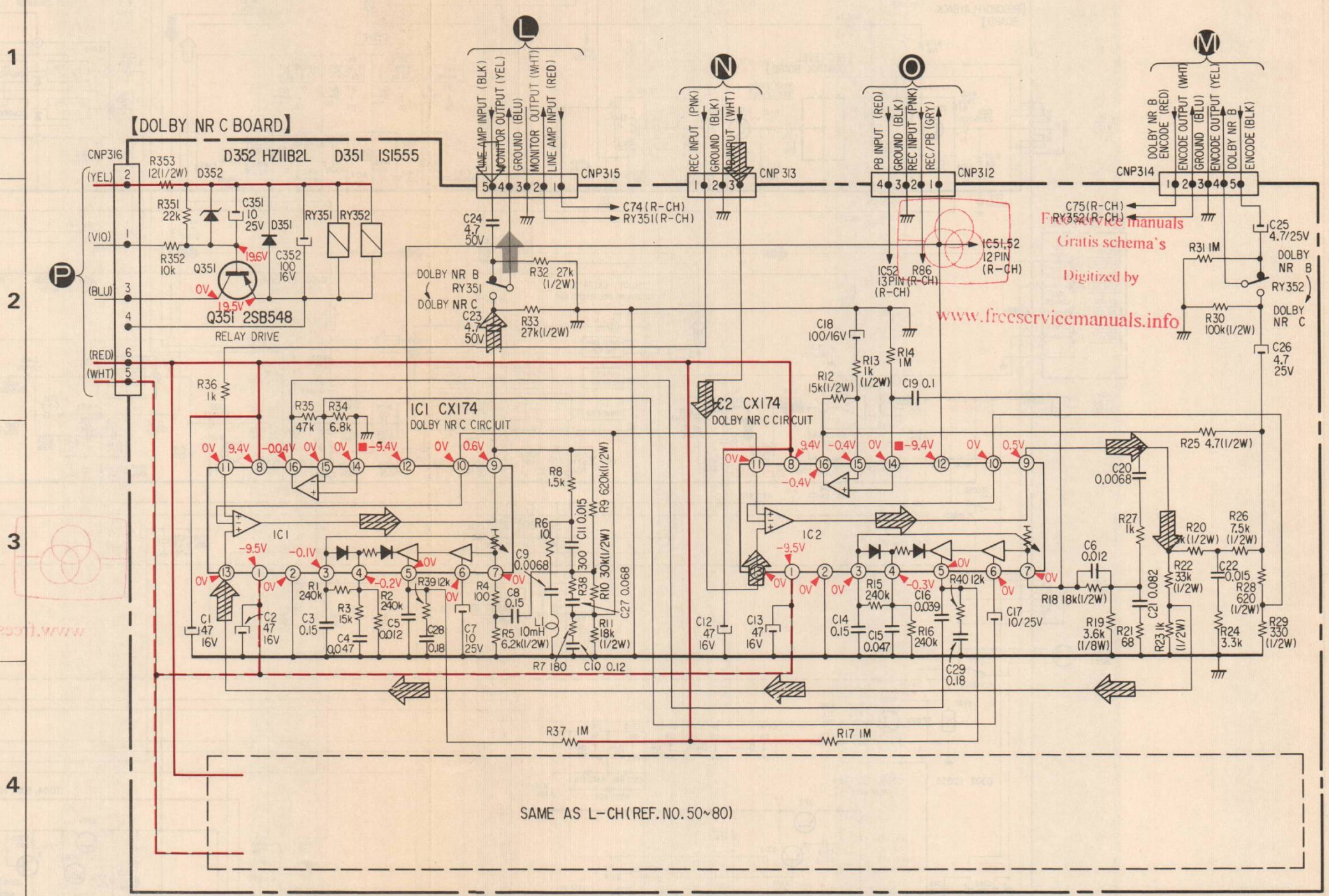
Note: Les composants identifiés par une trame et une marque sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

4-5. MOUNTING DIAGRAM - Conductor Side -



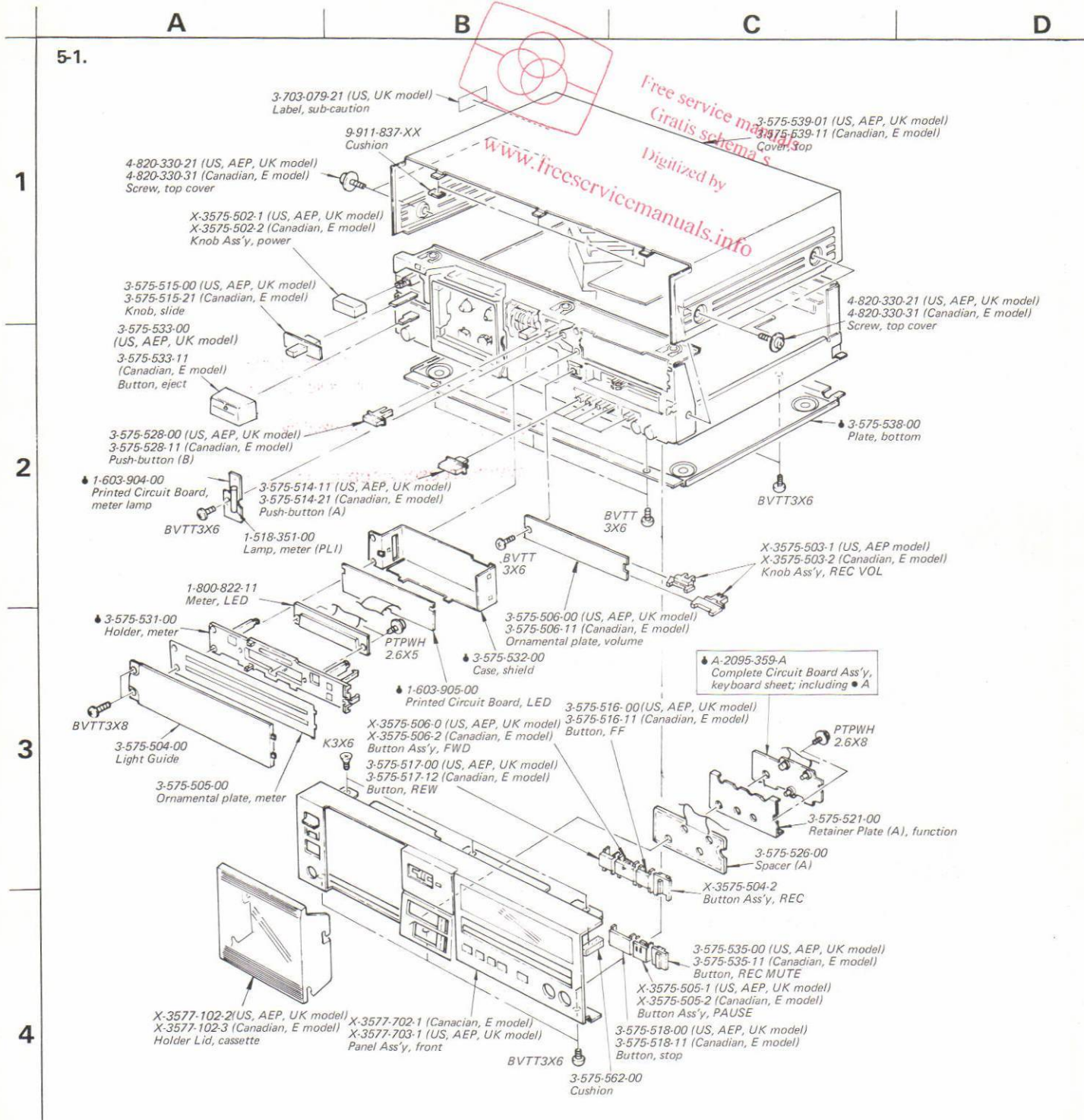
- B+ pattern
- B- pattern
- L-CH signal path (DOLBY NR B/C-TYPE)
- L-CH signal path (DOLBY NR B-TYPE)
- L-CH signal path (DOLBY NR C-TYPE)
- R-CH signal path (DOLBY NR B/C-TYPE)
- R-CH signal path (DOLBY NR B-TYPE)
- R-CH signal path (DOLBY NR C-TYPE)

4-6. SCHEMATIC DIAGRAM



- All capacitors are in μF unless otherwise noted. $\text{pF} : \mu\text{F}$ 50WV or less are not indicated except for electrolytics and tantalums.
- Components for right channel have same values as for left channel. Reference numbers are coded from 50 - 80.
- All resistors are in ohms, $\frac{1}{4}\text{W}$ unless otherwise noted.
- (N) : low-noise resistor.
- □ : adjustment for repair.
- — : B+ bus.
- - - - : B- bus.
- → : signal path (DOLBY NR B/C-TYPE)
- → : signal path (DOLBY NR B-TYPE)
- → : signal path (DOLBY NR C-TYPE)
- Readings are taken under no-signal conditions with a VOM (20 $\text{k}\Omega/\text{V}$).
- no mark : STOP

SECTION 5 EXPLODED VIEWS



Note:

- Items marked "▲" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All screws are Phillips (cross recess) type unless otherwise noted. (-) = slotted head
- (□□T) shows the number of coils in spring.

Due to standardization, parts with part numbers (▲-▲▲▲-▲▲▲-XX or ▲-▲▲▲▲-▲▲▲-X) may be different from those used in the set.

5 **Note:** The components identified by shading and mark ▲ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par une trame et une marque ▲ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

A B C D

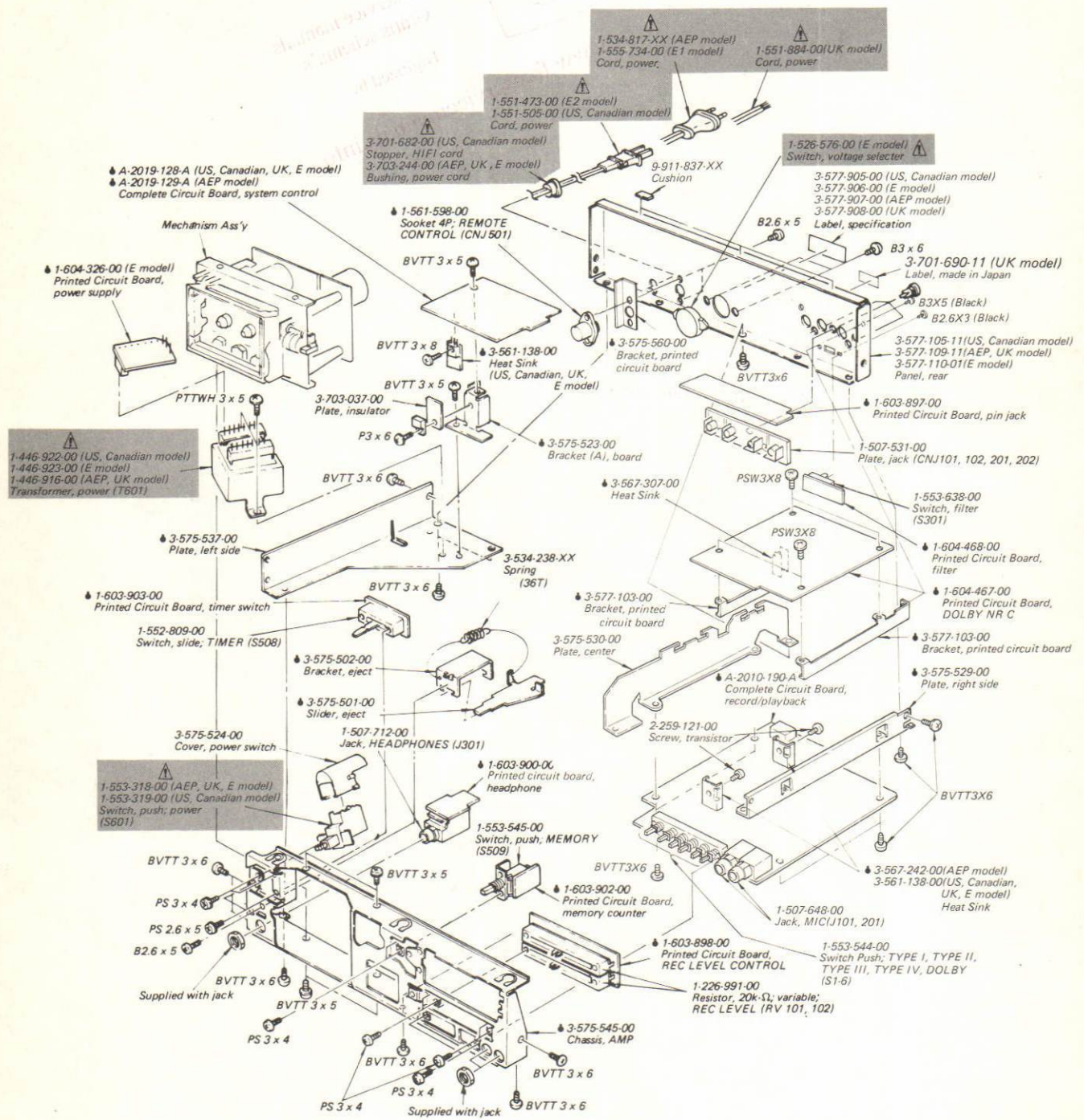
5-2.

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A

B

C

D

53.

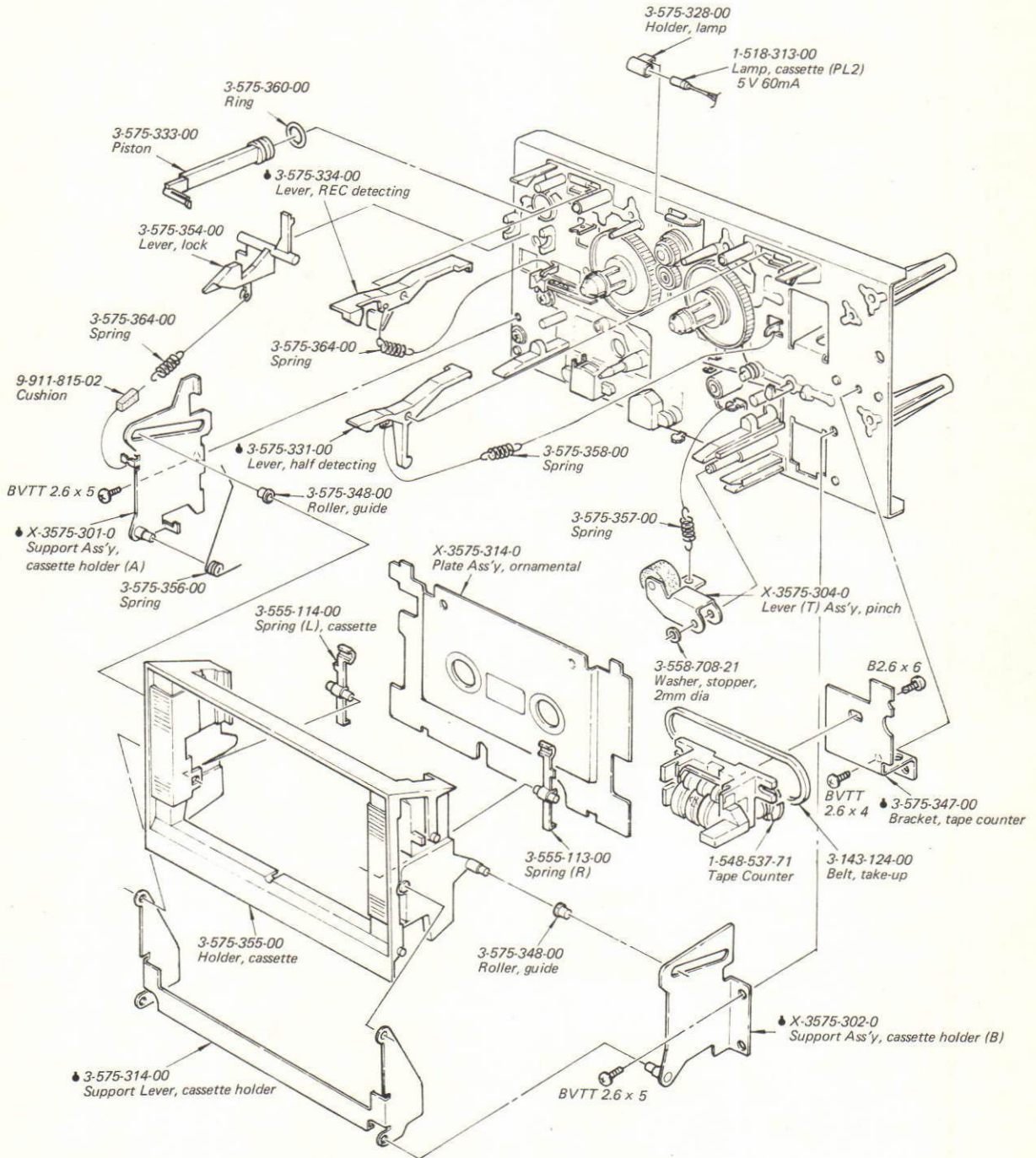
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SECTION 6

ELECTRICAL PARTS LIST

Ref. No. Part No. Description

SEMICONDUCTORS

Transistors

Q101, 102	} 8-729-334-58	2SC1345
Q201, 202		
Q103, 105		
Q203, 205		
Q309, 314		
Q402, 502	} 8-729-663-47	2SC1364
Q508, 602		
Q603, 801		
Q104, 204		
Q301		
Q302, 303	8-729-300-37	2SC458A
Q304, 308	8-729-203-04	2SK30A
Q305	8-729-154-83	2SB548
Q306, 307	} 8-729-612-77	2SA1027R
Q510-512		
Q351	8-729-154-83	2SB548
Q401	8-729-101-31	N13T1
Q403-406	8-729-195-23	2SA952
Q501	8-729-186-23	2SD862
Q503, 504	8-729-880-82	2SB808
Q505, 506	} 8-729-801-22	2SD1012
Q509		
Q507	8-729-103-43	2SB734
Q601	8-729-288-02	2SD880
Q803	8-729-101-02	PH102

IC

IC1, 2	} 8-759-101-74	CX174
IC51, 52		
IC101, 201		
IC301	8-759-705-62	NJM4562D
IC302	8-759-145-57	μ PC4557C
IC303	8-759-273-32	TA7332P
IC401	8-759-993-51	MSL9351
IC501	8-759-908-36	NSM5836
IC502	8-759-133-90	μ PC339C
IC503	8-759-905-70	NJM2903D

Ref. No. Part No. Description

Diodes

D101, 201	} 8-719-815-55	1S1555
D301-303		
D304, 305	8-719-910-64	HZ6B1L
D351	8-719-815-55	1S1555
D352	8-719-910-15	HZ11B2L
D401	1-800-822-11	SEL8806
D501-504	8-719-815-55	1S1555
D505	8-719-200-02	10E2
D506, 507	8-719-815-55	1S1555
D508	8-719-990-19	HZ11C3L
D601-609	Δ 8-719-200-02	10E2
D610	8-719-910-14	HZ11B1L
D611	8-719-931-15	EQB01-15
D801	8-719-815-55	1S1555

CAPACITORS

All capacitors are in μ F. Common capacitors are omitted. Refer to the list on pages 50 and 51 for their part numbers.

C113, 213	1-130-305-00	0.022	100V polyethylene
C123, 223	} 1-130-620-00	0.01	50V film
C140, 240			
C123, 224	1-130-627-00	0.039	50V film
C126, 226	} 1-130-629-00	0.056	50V film
C129, 229			
C128, 228	1-130-625-00	0.027	50V film
C133, 233	} 1-130-623-00	0.018	50V film
C143, 243			
C141, 241	1-130-621-00	0.012	50V film
C144, 244	1-130-624-00	0.022	50V film
C301, 304	Δ 1-121-398-11	10	25V electrolytic
C319	1-130-634-00	0.15	50V film
C515	1-130-632-00	0.1	50V film
C601	Δ 1-123-508-00	1000	35V electrolytic
C602	Δ 1-123-489-00	2200	16V electrolytic
C606, 607	Δ 1-123-349-00	1000	25V electrolytic
C610	Δ 1-130-232-00	0.022	125V film (US model)
C610	Δ 1-130-455-00	0.01	250V film (E model)
C610	Δ 1-130-098-00	0.022	125V film (Canadian model)

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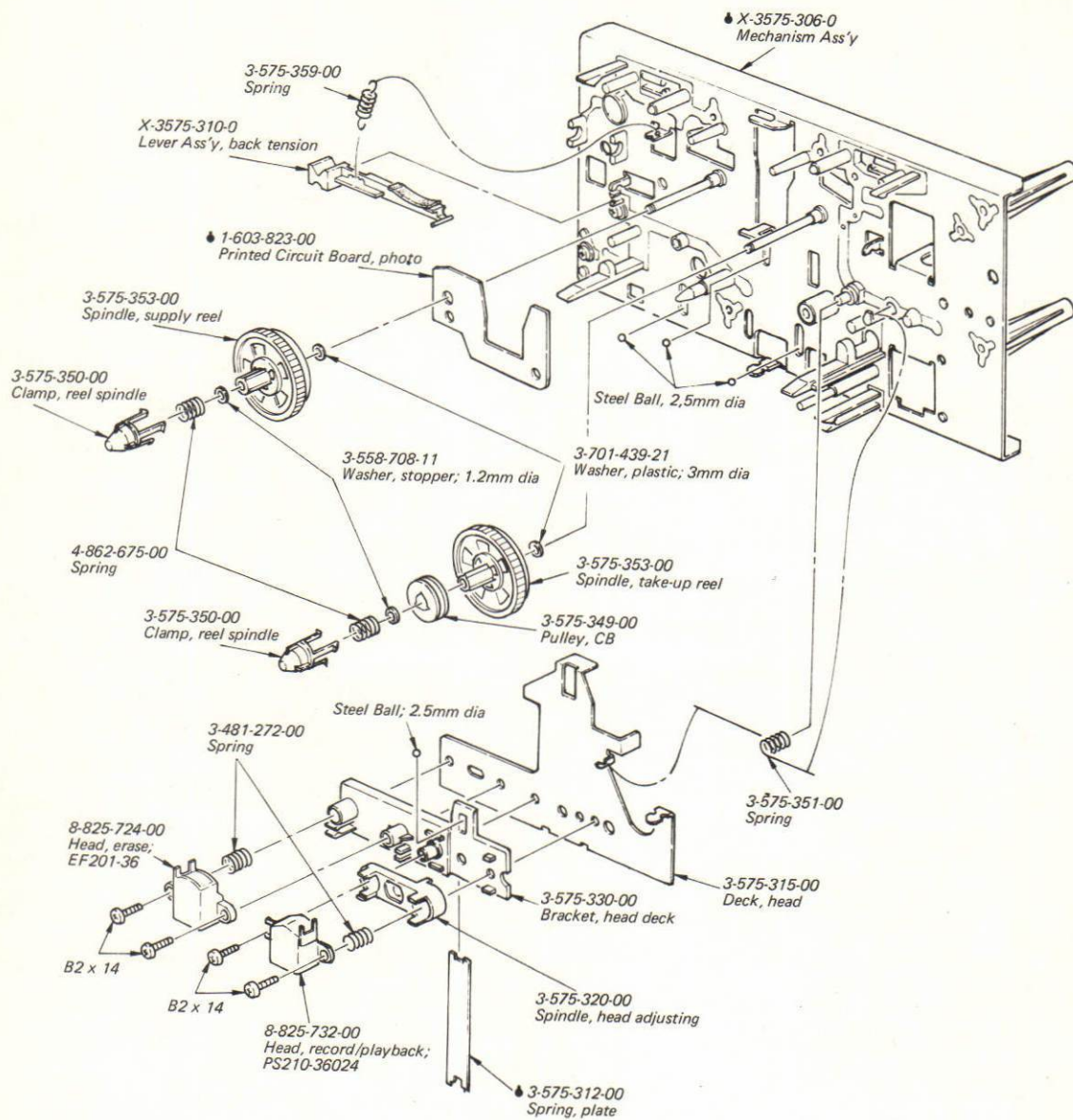
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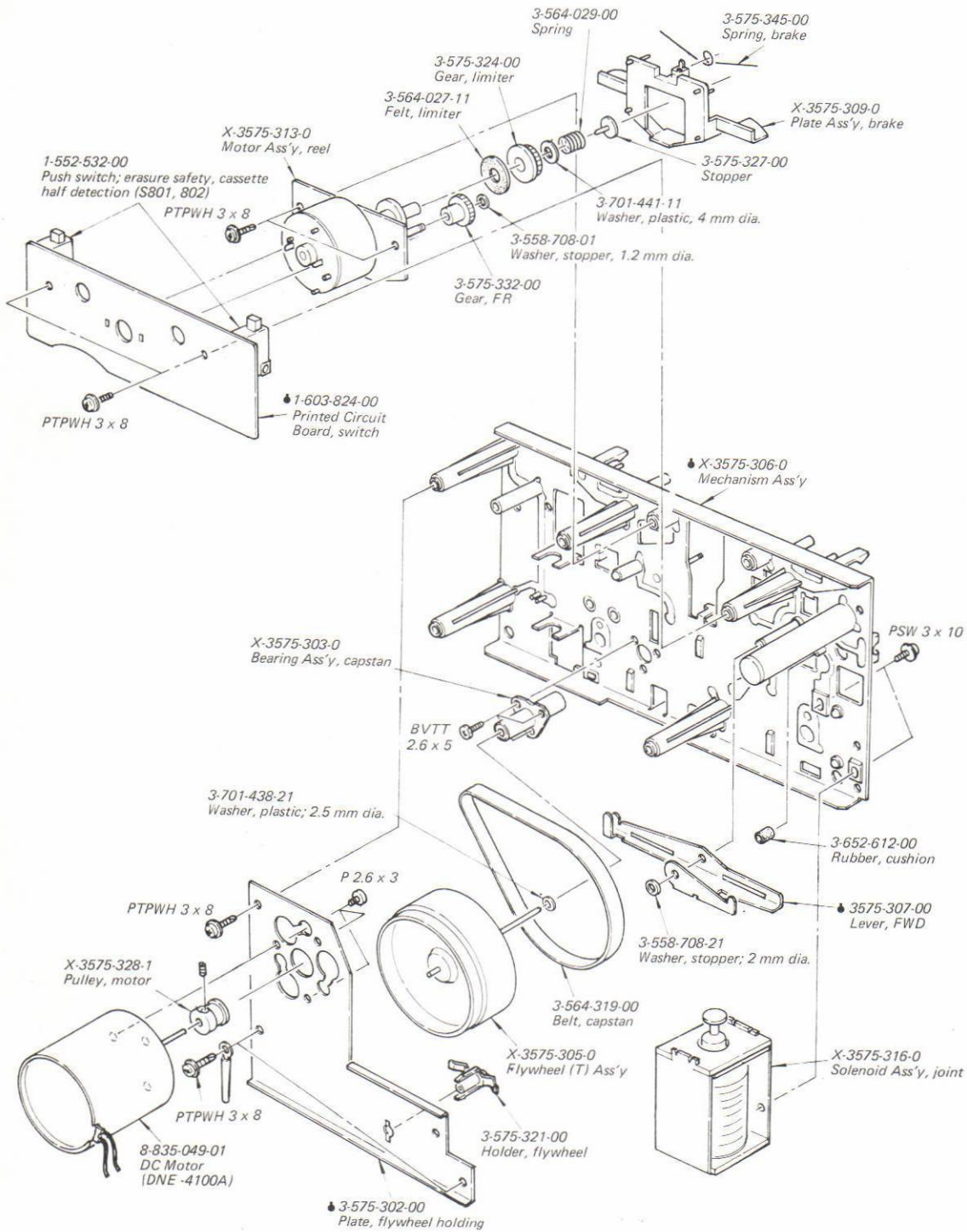
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Ref. No.	Part No.	Description
C610	⚠ 1-130-456-00	0.022 250V film (AEP, UK model)
CT101, 201	⚠ 1-141-225-00	trimmer

RESISTORS

All resistors are in ohms. Common 1/4W carbon resistors are omitted. Refer to the list on the last page for their part numbers.

R319, 320	⚠ 1-212-857-00	10 1/4W fusible
R556	⚠ 1-212-849-00	4.7 1/4W fusible (nonflammable)
R605, 606	⚠ 1-244-855-11	180 1/2W carbon
RV101, 201	1-226-991-00	20k-A variable, slide; REC LEVEL adjustable;
RV102, 202	1-224-645-XX	10k-B playback level
RV103, 203	1-224-647-XX	47k-B adjustable; record level
RV104, 204	1-226-233-00	1k-B adjustable; level meter

SWITCHES

S1-5	1-553-543-00	Pushbutton; TYPE I, TYPE II, TYPE III, TYPE IV, DOLBY
S301	1-553-638-00	Slide; FILTER
S508	1-552-809-00	Slide; TIMER
S509	1-553-545-00	Pushbutton; MEMORY
S601	⚠ 1-553-318-00	Pushbutton; POWER (AEP, UK, E model)
	⚠ 1-553-319-00	Pushbutton; POWER (US, Canadian model)
	⚠ 1-526-576-00	Voltage selector (E model)

MISCELLANEOUS

CNJ101, 201 102, 202	1-507-531-00	Jack, phono
CNJ501	● 1-561-598-00	Socket, 4-P; REMOTE CONTROL
CP301	1-464-110-00	Bias Osc Unit
J101, 201	1-507-711-00	Jack; MIC
J301	1-507-712-00	Jack; HEADPHONES
L1, 51	1-408-257-00	Microinductor, 10mH
L101, 201	1-408-262-00	Microinductor, 27mH
LPF101, 201	1-231-388-00	Filter, low-pass
PL1	1-518-351-00	Lamp, meter
RY301	1-515-323-00	Relay; REC/PB
RY351, 352	1-515-323-00	Relay; DOLBY C
T601	⚠ 1-446-916-00	Transformer, power (AEP, UK model)
	⚠ 1-446-922-00	Transformer, power (US, Canadian model)

Ref. No.	Part No.	Description
	⚠ 1-446-923-00	Transformer, power (E model)
	⚠ 3-701-682-00	Stopper, power cord (US, Canadian, E model)
	⚠ 3-703-244-00	Stopper, power cord (AEP, UK model)
	⚠ 1-534-817-XX	Cord, power (AEP model)
	⚠ 1-551-963-00	Cord, power (UK model)
	⚠ 1-551-473-00	Cord, power (E2 model)
	⚠ 1-551-505-00	Cord, power (US, Canadian model)
	⚠ 1-551-530-00	Cord, 2P, power (E1 model)

COMPLETE CIRCUIT BOARDS

● A-2010-190-A	REC/PB
● A-2019-128-A	System Control
● A-2095-359-A	Keyboard sheet

PRINTED CIRCUIT BOARDS

● 1-603-897-00	Jack
● 1-603-898-00	REC LEVEL CONTROL
● 1-603-900-00	Headphone
● 1-603-902-00	Counter Switch
● 1-603-903-00	TIMER Switch
● 1-603-904-00	Meter, lamp
● 1-603-905-00	METER
● 1-604-326-00	Power Supply (E model)
● 1-604-467-00	DOLBY NR C
● 1-604-468-00	FILTER

ACCESSORIES AND PACKING MATERIALS

Part No.	Description
X-3701-105-0	Tip Ass'y, head cleaning
1-511-734-11	Cord, connection; RK-74A
3-573-625-00	Sheet, polyethylene (US, Canadian, E model)
3-577-904-00	Carton, individual
3-701-630-00	Bag, plastic
3-703-450-01	Card, caution (US model)
3-783-509-11	Manual, instruction (AEP, UK, E model)
3-783-509-21	Manual, instruction (US, Canadian model)
3-793-828-11	Card, caution; cassette
3-795-142-11	Card (AEP model)
3-795-143-31	Card (Canadian model)
4-871-333-00	Sheet, protection (Canadian, E model)
8-890-434-11	Cassette tape (Canadian model)

ELECTROLYTIC CAPACITORS

CAP. (μF)	RATING → : Use the high voltage rated one.					
	6.3 VOLT.	10 VOLT.	16 VOLT.	25 VOLT.	35 VOLT.	50 VOLT.
	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.
0.47					→	1-121-726-00
1.0					→	1-121-391-00
2.2					→	1-121-450-00
3.3	→	→	→	1-121-392-00	→	1-121-393-00
4.7	→	→	→	1-121-395-00	→	1-121-396-00
10	→	→	1-121-651-00	1-121-398-00	→	1-121-738-00
22	→	→	1-121-479-00	1-121-480-00	1-121-662-00	1-121-152-00
33	→	→	1-121-403-00	1-121-404-00	1-121-652-00	1-121-405-00
47	→	1-121-352-00	1-121-409-00	1-121-410-00	1-121-653-00	1-121-411-00
100	→	1-121-414-00	1-121-415-00	1-121-416-00	1-121-357-00	1-121-417-00
220	1-121-419-00	1-121-420-00	1-121-421-00	1-121-422-00	1-121-261-00	1-121-423-00
330	1-121-751-00	1-121-805-00	1-121-521-00	1-121-654-00	1-121-655-00	1-121-656-00
470	1-121-424-00	1-121-425-00	1-121-426-00	1-121-733-00	1-121-361-00	1-121-810-00
1000	-	1-121-736-00	1-121-245-00	1-121-657-00	1-121-388-00	1-123-061-00
2200	1-121-658-00	1-121-659-00	1-121-660-00	1-123-067-00	1-121-984-00	-
3300	1-121-661-00	1-123-075-00	1-123-071-00	-	-	-

CAP. (μF)	100 VOLT.	160 VOLT.	250 VOLT.	350 VOLT.
	PART No.	PART No.	PART No.	PART No.
0.47	-	-	-	-
1.0	1-123-249-00	1-123-252-00	1-123-003-00	1-121-168-00
2.2	1-123-250-00	1-123-026-00	-	1-123-028-00
3.3	1-121-995-00	-	1-123-004-00	1-123-006-00
4.7	1-123-255-00	1-121-246-00	1-121-759-00	1-123-007-00
10	1-121-126-00	1-121-999-00	1-123-254-00	1-123-008-00
22	1-121-996-00	1-123-253-00	1-123-005-00	1-123-022-00
33	1-121-997-00	1-121-757-00	-	-
47	1-123-251-00	1-121-919-00	-	-
100	1-123-084-00	-	-	-

CERAMIC CAPACITORS

CAP. (pF)	RATING						
	50 VOLT.	CAP. (pF)	50 VOLT.	CAP. (pF)	50 VOLT.	CAP. (μF)	50 VOLT.
	PART No.		PART No.		PART No.		PART No.
0.5	1-101-837-00	22	1-102-959-00	150	1-101-361-00	0.001	1-102-074-00
0.75	1-101-586-00	24	1-102-960-00	160	1-101-367-00	0.0012	1-102-118-00
1.0	1-102-934-00	27	1-102-961-00	180	1-102-976-00	0.0015	1-102-119-00
1.5	1-101-576-00	30	1-102-962-00	200	1-102-977-00	0.0018	1-102-120-00
2.0	1-102-935-00	33	1-102-963-00	220	1-102-978-00	0.0022	1-102-121-00
3	1-102-936-00	36	1-102-964-00	240	1-102-979-00	0.0027	1-102-122-00
4	1-102-937-00	39	1-102-965-00	270	1-102-980-00	0.0033	1-102-123-00
5	1-102-942-00	43	1-102-966-00	300	1-102-981-00	0.0039	1-102-124-00
6	1-102-943-00	47	1-101-880-00	330	1-102-820-00	0.0047	1-102-125-00
7	1-102-944-00	51	1-101-882-00	360	1-102-821-00	0.0056	1-102-126-00
8	1-102-945-00	56	1-101-884-00	390	1-102-822-00	0.0068	1-102-127-00
9	1-102-946-00	62	1-101-886-00	430	1-102-823-00	0.0082	1-102-128-00
10	1-102-947-00	68	1-101-888-00	470	1-102-824-00	0.01	1-102-129-00
11	1-102-948-00	75	1-101-890-00	510	1-101-059-00	0.022	1-101-005-00
12	1-102-949-00	82	1-102-971-00	560	1-102-115-00	0.047	1-101-006-00
13	1-102-950-00	91	1-102-972-00	680	1-102-116-00		
15	1-102-951-00	100	1-102-973-00	820	1-102-117-00		
16	1-102-952-00	110	1-102-815-00				
18	1-102-953-00	120	1-102-816-00				
20	1-102-958-00	130	1-101-081-00				

0.001μF = 1,000pF

CERAMIC (SEMICONDUCTOR) CAPACITORS

CAP. (μF)	RATING → : Use the high voltage rated one.				
	25 VOLT.	50 VOLT.	CAP. (μF)	25 VOLT.	50 VOLT.
	PART No.	PART No.		PART No.	PART No.
0.001	→	1-161-039-00	0.018	1-161-016-00	1-161-054-00
0.0012	→	1-161-040-00	0.022	1-161-017-00	1-161-055-00
0.0015		1-161-041-00	0.027	1-161-018-00	1-161-056-00
0.0018		1-161-042-00	0.033	1-161-019-00	1-161-057-00
0.0022		1-161-043-00	0.039	1-161-010-00	1-161-058-00
0.0027	→	1-161-044-00	0.047	1-161-021-00	1-161-059-00
0.0033	→	1-161-045-00	0.056	→	1-161-060-00
0.0039	→	1-161-046-00	0.068	→	1-161-061-00
0.0047	→	1-161-047-00	0.082	1-161-024-00	1-161-062-00
0.0056	→	1-161-048-00	0.1	1-161-025-00	1-161-063-00
0.0068	→	1-161-049-00			
0.0082	1-161-012-00	1-161-050-00			
0.01	1-161-013-00	1-161-051-00			
0.012	→	1-161-052-00			
0.015	1-161-015-00	1-161-053-00			

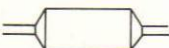
MYLAR CAPACITORS

CAP. (μF)	RATING										
	50 VOLT.			100 VOLT.			200 VOLT.				
	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.			
0.001	1-108-227-00	1-108-365-00	1-108-409-00	0.01	1-108-239-00	1-108-377-00	1-108-421-00	0.1	1-108-251-00	1-108-389-00	1-108-433-00
0.0012	1-108-351-00	1-108-366-00	1-108-410-00	0.012	1-108-357-00	1-108-378-00	1-108-422-00	0.12	1-108-363-00	1-108-390-00	1-108-434-00
0.0015	1-108-228-00	1-108-367-00	1-108-411-00	0.015	1-108-240-00	1-108-379-00	1-108-423-00	0.15	1-108-252-00	1-108-391-00	1-108-435-00
0.0018	1-108-352-00	1-108-368-00	1-108-412-00	0.018	1-108-358-00	1-108-380-00	1-108-424-00	0.18	1-108-364-00	1-108-392-00	1-108-436-00
0.0022	1-108-220-00	1-108-369-00	1-108-413-00	0.022	1-108-242-00	1-108-381-00	1-108-425-00	0.22	1-108-254-00	1-108-393-00	1-108-437-00
0.0027	1-108-353-00	1-108-370-00	1-108-414-00	0.027	1-108-359-00	1-108-382-00	1-108-426-00	0.27	1-108-854-00	-	-
0.0033	1-108-232-00	1-108-371-00	1-108-415-00	0.033	1-108-244-00	1-108-383-00	1-108-427-00	0.33	1-108-855-00	-	-
0.0039	1-108-354-00	1-108-372-00	1-108-416-00	0.039	1-108-360-00	1-108-384-00	1-108-428-00	0.39	1-108-856-00	-	-
0.0047	1-108-234-00	1-108-373-00	1-108-417-00	0.047	1-108-246-00	1-108-385-00	1-108-429-00	0.47	1-108-857-00	-	-
0.0056	1-108-355-00	1-108-374-00	1-108-418-00	0.056	1-108-361-00	1-108-386-00	1-108-430-00	-	-	-	-
0.0068	1-108-237-00	1-108-375-00	1-108-419-00	0.068	1-108-249-00	1-108-387-00	1-108-431-00	-	-	-	-
0.0082	1-108-356-00	1-108-376-00	1-108-420-00	0.082	1-108-362-00	1-108-388-00	1-108-432-00	-	-	-	-



TANTALUM CAPACITORS

CAP. (μF)	RATING → : Use the high voltage rated one.						
	3.15 VOLT.	6.3 VOLT.	10 VOLT.	16 VOLT.	20 VOLT.	25 VOLT.	35 VOLT.
	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.
0.01	-	-	-	-	→	→	1-131-396-00
0.015	-	-	-	-	→	→	1-131-397-00
0.022	-	-	-	-	→	→	1-131-398-00
0.033	-	-	-	-	→	→	1-131-399-00
0.047	-	-	-	-	→	→	1-131-400-00
0.068	-	-	-	-	→	→	1-131-401-00
0.1	-	-	-	-	→	→	1-131-402-00
0.15	-	-	-	-	→	→	1-131-403-00
0.22	-	-	-	-	→	→	1-131-404-00
0.33	-	-	-	-	→	1-131-409-00	1-131-405-00
0.47	-	-	-	-	1-131-412-00	→	1-131-406-00
0.68	-	-	-	1-131-415-00	→	1-131-410-00	1-131-407-00
1.0	-	-	1-131-418-00	-	1-131-413-00	→	1-131-408-00
1.5	-	1-131-421-00	-	1-131-416-00	→	1-131-411-00	1-131-348-00
2.2	1-131-424-00	-	1-131-419-00	-	1-131-414-00	1-131-355-00	1-131-349-00
3.3	-	1-131-422-00	-	1-131-417-00	1-131-362-00	1-131-356-00	1-131-350-00
4.7	1-131-425-00	-	1-131-420-00	1-131-369-00	1-131-363-00	1-131-357-00	1-131-351-00
6.8	-	1-131-423-00	1-131-376-00	1-131-370-00	1-131-364-00	1-131-358-00	1-131-352-00
10	1-131-426-00	1-131-383-00	1-131-377-00	1-131-371-00	1-131-365-00	1-131-359-00	1-131-353-00
15	1-131-390-00	1-131-384-00	1-131-378-00	1-131-372-00	1-131-366-00	1-131-360-00	-
22	1-131-391-00	1-131-385-00	1-131-379-00	1-131-373-00	1-131-367-00	-	-
33	1-131-392-00	1-131-386-00	1-131-380-00	1-131-374-00	-	-	-
47	1-131-393-00	1-131-387-00	1-131-381-00	-	-	-	-
68	1-131-394-00	1-131-388-00	-	-	-	-	-
100	1-131-395-00	-	-	-	-	-	-



TANTALUM CAPACITORS

CAP. (μF)	RATING					
	3 VOLT.	6.3 VOLT.	10 VOLT.	16 VOLT.	20 VOLT.	35 VOLT.
	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.
0.033	-	-	-	-	-	1-131-273-00
0.047	-	-	-	-	-	1-131-274-00
0.068	-	-	-	-	-	1-131-275-00
0.1	-	-	-	-	-	1-131-276-00
0.15	-	-	-	-	-	1-131-277-00
0.22	-	-	-	-	1-131-262-00	1-131-278-00
0.33	-	-	-	-	1-131-263-00	1-131-279-00
0.47	-	-	1-131-169-00	-	1-131-264-00	1-131-280-00
0.68	-	-	-	1-131-258-00	-	1-131-281-00
1.0	-	-	1-131-254-00	-	1-131-265-00	1-131-281-00
1.5	-	1-131-250-00	-	-	1-131-266-00	1-131-282-00
2.2	-	-	-	1-131-259-00	1-131-267-00	1-131-283-00
3.3	-	-	1-131-255-00	-	1-131-268-00	1-131-284-00
4.7	-	1-131-251-00	1-131-171-00	-	1-131-269-00	-
6.8	-	-	-	1-131-260-00	1-131-270-00	-
10	-	-	1-131-256-00	-	1-131-271-00	-
15	-	1-131-252-00	-	1-131-261-00	1-131-272-00	-
22	-	-	1-131-257-00	-	-	-
33	1-131-176-00	1-131-253-00	1-131-173-00	-	-	-
47	1-131-288-00	1-131-174-00	-	-	-	-
100	1-131-177-00	-	-	-	-	-

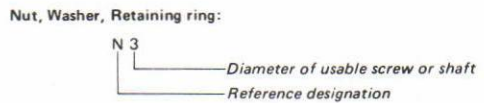
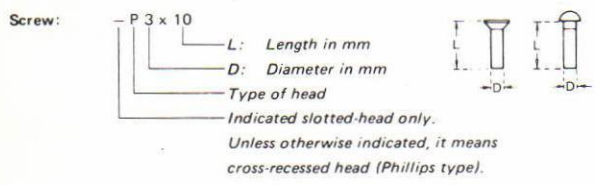
1/4 WATT CARBON RESISTORS

Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.
1.0	1-246-401-00	10	1-246-425-00	100	1-246-449-00	1.0k	1-246-473-00	10k	1-246-497-00	100k	1-246-521-00	1.0M	1-246-545-00
1.1	1-246-402-00	11	1-246-426-00	110	1-246-450-00	1.1k	1-246-474-00	11k	1-246-498-00	110k	1-246-522-00	1.1M	1-210-814-00
1.2	1-246-403-00	12	1-246-427-00	120	1-246-451-00	1.2k	1-246-475-00	12k	1-246-499-00	120k	1-246-523-00	1.2M	1-210-815-00
1.3	1-246-404-00	13	1-246-428-00	130	1-246-452-00	1.3k	1-246-476-00	13k	1-246-500-00	130k	1-246-524-00	1.3M	1-210-816-00
1.5	1-246-405-00	15	1-246-429-00	150	1-246-453-00	1.5k	1-246-477-00	15k	1-246-501-00	150k	1-246-525-00	1.5M	1-210-817-00
1.6	1-246-406-00	16	1-246-430-00	160	1-246-454-00	1.6k	1-246-478-00	16k	1-246-502-00	160k	1-246-526-00	1.6M	1-210-818-00
1.8	1-246-407-00	18	1-246-431-00	180	1-246-455-00	1.8k	1-246-479-00	18k	1-246-503-00	180k	1-246-527-00	1.8M	1-210-819-00
2.0	1-246-408-00	20	1-246-432-00	200	1-246-456-00	2.0k	1-246-480-00	20k	1-246-504-00	200k	1-246-528-00	2.0M	1-210-820-00
2.2	1-246-409-00	22	1-246-433-00	220	1-246-457-00	2.2k	1-246-481-00	22k	1-246-505-00	220k	1-246-529-00	2.2M	1-210-821-00
2.4	1-246-410-00	24	1-246-434-00	240	1-246-458-00	2.4k	1-246-482-00	24k	1-246-506-00	240k	1-246-530-00	2.4M	1-244-754-00
2.7	1-246-411-00	27	1-246-435-00	270	1-246-459-00	2.7k	1-246-483-00	27k	1-246-507-00	270k	1-246-531-00	2.7M	1-244-755-00
3.0	1-246-412-00	30	1-246-436-00	300	1-246-460-00	3.0k	1-246-484-00	30k	1-246-508-00	300k	1-246-532-00	3.0M	1-244-756-00
3.3	1-246-413-00	33	1-246-437-00	330	1-246-461-00	3.3k	1-246-485-00	33k	1-246-509-00	330k	1-246-533-00	3.3M	1-244-757-00
3.6	1-246-414-00	36	1-246-438-00	360	1-246-462-00	3.6k	1-246-486-00	36k	1-246-510-00	360k	1-246-534-00	3.6M	1-244-758-00
3.9	1-246-415-00	39	1-246-439-00	390	1-246-463-00	3.9k	1-246-487-00	39k	1-246-511-00	390k	1-246-535-00	3.9M	1-244-759-00
4.3	1-246-416-00	43	1-246-440-00	430	1-246-464-00	4.3k	1-246-488-00	43k	1-246-512-00	430k	1-246-536-00	4.3M	1-244-760-00
4.7	1-246-417-00	47	1-246-441-00	470	1-246-465-00	4.7k	1-246-489-00	47k	1-246-513-00	470k	1-246-537-00	4.7M	1-244-761-00
5.1	1-246-418-00	51	1-246-442-00	510	1-246-466-00	5.1k	1-246-490-00	51k	1-246-514-00	510k	1-246-538-00	5.1M	1-244-762-00
5.6	1-246-419-00	56	1-246-443-00	560	1-246-467-00	5.6k	1-246-491-00	56k	1-246-515-00	560k	1-246-539-00		
6.2	1-246-420-00	62	1-246-444-00	620	1-246-468-00	6.2k	1-246-492-00	62k	1-246-516-00	620k	1-246-540-00		
6.8	1-246-421-00	68	1-246-445-00	680	1-246-469-00	6.8k	1-246-493-00	68k	1-246-517-00	680k	1-246-541-00		
7.5	1-246-422-00	75	1-246-446-00	750	1-246-470-00	7.5k	1-246-494-00	75k	1-246-518-00	750k	1-246-542-00		
8.2	1-246-423-00	82	1-246-447-00	820	1-246-471-00	8.2k	1-246-495-00	82k	1-246-519-00	820k	1-246-543-00		
9.1	1-246-424-00	91	1-246-448-00	910	1-246-472-00	9.1k	1-246-496-00	91k	1-246-520-00	910k	1-246-544-00		

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Reference Designation	Shape	Description	Remarks
SCREWS			
P		pan-head screw	binding-head (B) screw for replacement
PWH		pan-head screw with washer face	binding-head (B) screw and flat washer for replacement
PS PSP		pan-head screw with spring washer	binding-head (B) screw and spring washer for replacement
PSW PSPW		pan-head screw with spring and flat washers	binding-head (B) screw and spring and flat washers for replacement
R		round-head screw	binding-head (B) screw for replacement
K		flat-countersunk-head screw	
RK		oval-countersunk-head screw	
B		binding-head screw	
T		truss-head screw	binding-head (B) screw for replacement
F		flat-fillister-head screw	
RF		fillister-head screw	
BV		braizer-head screw	

Reference Designation	Shape	Description	Remarks
SELF-TAPPING SCREWS			
TA		self-tapping screw	ex: TA, P 3 x 10
PTP		pan-head self-tapping screw	binding-head self-tapping (TA, B) screw for replacement
PTPWH		pan-head self-tapping screw with washer face	binding-head self-tapping (TA, B) screw and flat washer for replacement
PTTWH		pan-head thread-rolling screw with washer face	binding-head (B) screw and flat washer for replacement
SET SCREWS			
SC		set screw	
SC		hexagon-socket set screw	ex: SC 2.6 x 4, hexagon socket
NUT			
N		nut	
WASHERS			
W		flat washer	
SW		spring washer	
LW		internal-tooth lock washer	ex: LW3, internal
LW		external-tooth lock washer	ex: LW3, external
RETAINING RINGS			
E		retaining ring	
G		grip-type retaining ring	

Sony Corporation

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